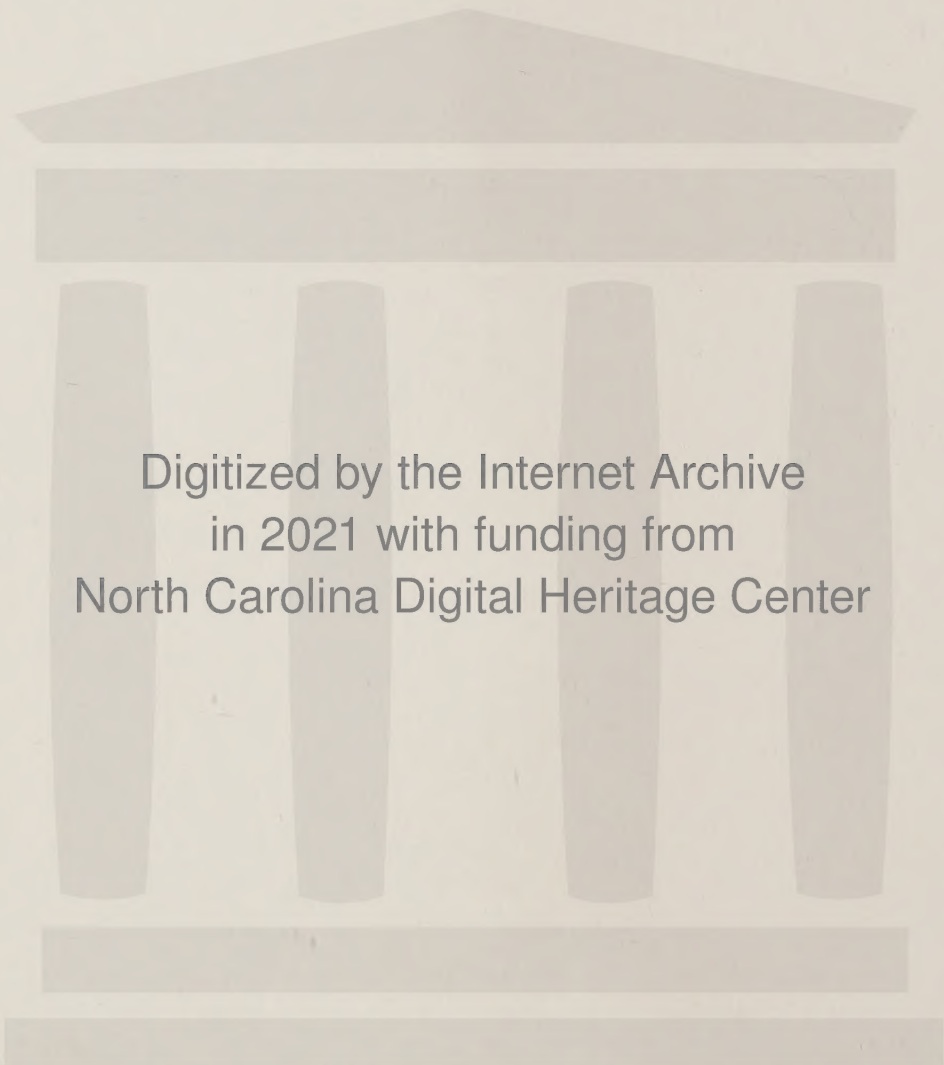
Asheville-Buncombe Technical College 1986-1987



ASHEVILLE-BUNCOMBE TECHNICAL COLLEGE

340 Victoria Road
Asheville, N.C. 28801

Phone: (704) 254-1921

Recognized and Approved by
North Carolina State Board of Education
North Carolina Department of Community Colleges
North Carolina Office of Emergency Medical Services
Division of Vocational Rehabilitation
and for Veterans Participation

Member of
American Association of Community and Junior Colleges
North Carolina Department of Community Colleges
Student Services Personnel Association
N.C.A.C.C. Instructional Administrators
Association of Community College Business Officials
American Library Association
Learning Resources Association

Accredited By
North Carolina Board of Nursing
National Accrediting Agency for Clinical Laboratory Sciences
American Medical Association
American Dental Association, Commission on Dental Accreditation
Asheville-Buncombe Technical College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools.

Catalog of Courses

Day and Evening College

Volume 24
1986-1987

1986

SEPTEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCTOBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1987

JANUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

COLLEGE CALENDAR 1986-87

FALL QUARTER

Registration—Continuing Students—Day ..... August 14, 15
(9:00 a.m.-12:30 p.m. & 1:30 p.m.-3:00 p.m.)
Registration—Continuing Students—Evening (6-8 p.m.) ..... August 11-14
Registration—Freshman—(By Appointment) ..... August 25-27
Registration—New Special Schedule Students ..... September 2
Freshman Orientation and Classes Begin ..... September 3
Last Day For Registration ..... September 9
Last Class Drop Day ..... September 12
High School Visitation Day ..... T.B.A.
Instructor Work Days/Student Holidays ..... October 27, 28
Last Day of Examinations ..... November 20
Total Class Days 55
Instructor Work Day ..... November 21
Instructor Optional Days ..... November 24, 25, 26
Holidays: Thanksgiving ..... November 27, 28

WINTER QUARTER

Registration—Continuing Students—Day ..... November 12, 13, 14
(9:00 a.m.-12:30 p.m. & 1:00 p.m.-3:00 p.m.)
Registration—Continuing Students—Evening (6-8 p.m.) ..... November 10-13
Registration—New Students ..... December 1
Classes Begin ..... December 2
Last Day For Registration ..... December 8
Last Class Drop Day ..... December 11
Last Day For Examinations ..... February 27
Total Class Days 55
*Instructor Work Days ..... March 2, 3
*Instructor Optional Days ..... March 4, 5, 6, 9, 10
Holidays: Christmas ..... December 23-31
New Year's ..... January 1, 2

SPRING QUARTER

Registration—Continuing Students—Day ..... February 19, 20
(9:00 a.m.-12:30 p.m. & 1:00 p.m.-3:00 p.m.)
Registration—Continuing Students—Evening (6-8 p.m.) ..... February 16-19
Registration—New Students ..... March 11
Classes Begin ..... March 12
Last Day For Registration ..... March 18
Last Class Drop Day ..... March 23
Graduation Confirmation Week ..... April 27-May 1
Last Day Of Examinations ..... May 29
Total Class Days 55
Instructor Optional Days ..... June 1, 2, 3, 4, 5
Holidays: Good Friday ..... April 17
Easter Monday ..... April 20

SUMMER QUARTER

Registration—Continuing Students—Day ..... May 21, 22
(9:00 a.m.-12:30 p.m. & 1:00 p.m.-3:00 p.m.)
Registration—Continuing Students—Evening (6-8 p.m.) ..... May 18-21
Registration—New Students ..... June 8
Classes Begin ..... June 9
Last Day For Registration ..... June 15
Last Class Drop Day ..... June 18
Graduation Confirmation Week ..... July 20-24
Last Day Of Examinations ..... August 25
Graduation ..... August 28
Total Class Days 55
Instructor Optional Days ..... August 26, 27, 31, Sept. 1, 2, 3, 4
Holidays: Independence Day ..... July 3
Labor Day ..... September 7

Twelve months teaching faculty may select any 14 optional days as vacation; nine months teaching faculty any 10.5 days. Remaining optional days are faculty work days.

*Up to five days lost due to inclement weather may be made up at this time.

EVENING AND WEEKEND COLLEGE CALENDAR 1986-87

FALL QUARTER

Registration—Continuing Evening and Weekend Students (6-8 p.m.).....August 11-15
Registration—Freshman (By Appointment).....August 25-27
Registration—New Special Schedule Students (6:15 p.m.).....September 2
Classes Begin.....September 3
Last Night for Registration.....September 9
Last Night to Drop a Class.....September 12
Mid-Quarter Break.....October 27, 28
Last Night of Classes.....November 20
Holiday: Thanksgiving.....November 27, 28 & 29

WINTER QUARTER

Registration—Continuing Evening and Weekend Students (6-8 p.m.).....November 10-13
Registration—New Students (6:15 p.m.).....December 1
Classes Begin.....December 2
Last Night for Registration.....December 8
Last Night to Drop a Class.....December 11
Last Night of Classes.....February 27
*Inclement Weather Make-Up Nights.....March 2, 3, 4, 5
Holidays: Christmas.....December 23-31
New Year's.....January 1, 2

SPRING QUARTER

Registration—Continuing Evening and Weekend Students (6-8 p.m.).....February 16-19
Registration—New Students (6:15 p.m.).....March 11
Classes Begin.....March 12
Last Night for Registration.....March 18
Last Night to Drop a Class.....March 23
Graduation Confirmation Week.....April 27-May 1
Last Night of Classes.....May 23
Holidays: Good Friday.....April 17
Easter Monday.....April 20

SUMMER QUARTER

Registration—Continuing Evening and Weekend Students (6-8 p.m.).....May 18-21
Registration—New Students (6:15 p.m.).....June 8
Classes Begin.....June 9
Last Night for Registration.....June 15
Last Night to Drop a Class.....June 18
Graduation Confirmation.....July 20-24
Last Night of Classes.....August 25
Graduation.....August 28
Holidays: Independence Day.....July 3
Labor Day.....September 7

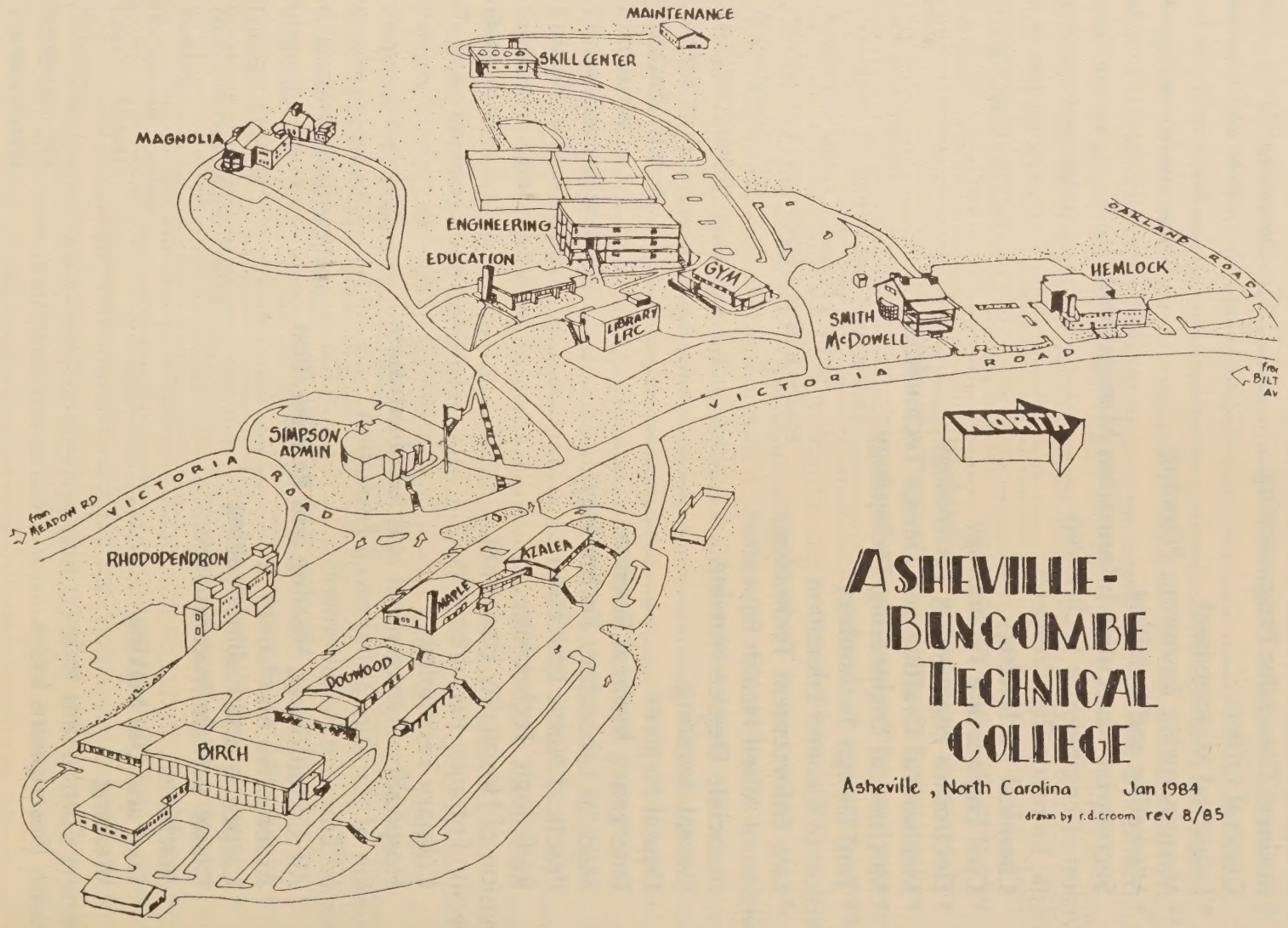
*Nights lost because of inclement weather may be made up during this period.

TABLE OF CONTENTS

CURRICULUMS

*Curriculums offered in both day and evening hours. Enrollment will determine offering or continuing a curriculum.

**Offered evening hours only.



ASHEVILLE-BUNCOMBE TECHNICAL COLLEGE

Asheville, North Carolina Jan 1984

drawn by r.d.croom rev 8/85

BUILDINGS LEGEND

Thomas W. Simpson Administration Building

- Business Office
- Development Office
- Elevated Lecture Room
- Financial Aid Office
- Offices of Instruction
- Personnel Office
- President

Azalea Building

- Bookstore
- Job Developer
- Snack Shop
- Student Government Office
- Student Services
- Veterans Representative

Birch Building

- Business Administration
- Cafeteria
- Computer Programming
- Culinary Technology
- English & Social Studies
- Hospitality Management and Administration
- Office Education

Dogwood Building

- Air Conditioning, Heating and Refrigeration
- Carpentry and Cabinetmaking
- Diesel Vehicle Maintenance
- Physics
- Welding

Educational Building

- Mathematics
- Guided Studies
- Learning Laboratory

Engineering Building

- Chemical Technology
- Civil Engineering Technology
- Electronics Engineering Technology
- Mechanical Drafting and Design Technology
- Mechanical Engineering Technology
- Tool Design Technology

Hemlock Building

- Continuing Education
- Emergency Medical Science
- Law Enforcement Technology

Learning Resources Center

- Audio-Visuals
- Library

Magnolia Building

- Continuing Education Classes
- Human Resources Programs

Maple Building

- Automotive Mechanics
- Machine Shop
- Tool & Die Making

Oak Gymnasium

- Athletics
- Physical Education

Rhododendron Building

- Associate Degree Nursing
- Dental Assisting
- Dental Hygiene
- Medical Laboratory Technology
- Practical Nurse Education
- Radiologic Technology

Skills Center

- Continuing Education Classes
- New Industry Training

HISTORY

Asheville-Buncombe Technical College has served as the community's premier technical educator for over twenty-five years. Originally funded by a bond election, the institution was established on September 1, 1959, and named an Industrial Education Center.

Following legislation creating the North Carolina System of Community Colleges enacted in 1963 by the General Assembly, the name was changed on January 27, 1964, to Asheville-Buncombe Technical Institute. This legislation enabled the College to confer the Associate in Applied Science degree for the first time at graduation ceremonies in August, 1964.

The Board of Trustees approved a final name change to Asheville-Buncombe Technical College on August 6, 1979.

In the early years, the College administered the operation of four units located throughout Western North Carolina. These units have gained independent status and are now fully accredited technical and community colleges.

ADMINISTRATION

The College was initially administered by the Asheville City School Board of Education. Following the establishment of the North Carolina System of Community Colleges, control passed to an independent board of trustees.

From the beginning, prominent Asheville and Buncombe County business and community leaders have helped to guide the College. In addition, each department has an advisory committee made up of local practitioners. All together several hundred local citizens provide guidance for the educational programs of the College.

CAMPUS FACILITIES

On March 15, 1961, the educational center moved into two newly constructed buildings off Victoria Road. Over the years the Board of Trustees has acquired land that today totals 113.99 acres.

Fourteen buildings house academic programs and campus services. Also on the campus is the Smith-McDowell House, the oldest house in Buncombe County, leased to the Western North Carolina Historical Association.

On December 12, 1984, the College opened a Madison County Center located in Marshall. The Center provides adult education and upgrading courses for the people of Madison County.

In 1985, the North Carolina General Assembly approved a $3 million dollar package of special legislation for construction of a High Technology addition to the Engineering Building to house a unique program in Tool Design Technology and General Education.

CURRICULA

The first program offered in 1959 was Practical Nurse Education. Electronics Engineering Technology and the Machinist programs were started in 1960. These three curricula still are offered along with thirty other career programs. The last

program added was Tool Design Technology, a unique curriculum serving local industry to educate its employees for the skills involved in manufacturing.

Programs offered by the College mirror its fundamental mission—to prepare students through practical education for vocational and technical careers.

CURRENT STATUS

Asheville-Buncombe Technical College with strong local support has grown in facilities and land acquisition, in enrollment, and in expanded services to the community until today the College has the largest headcount enrollment of any institute of higher education in Western North Carolina.

LOCATION

The main campus is located off Victoria Road in Asheville, North Carolina, a city repeatedly named as one of the most liveable towns in America.

Situated near major interstates and on local bus routes, the College is convenient for the citizens it serves. Ample parking close to class buildings is provided free on campus.

The Madison County Center is located in Marshall, North Carolina.

STATEMENT OF PURPOSE

The fundamental purpose of Asheville-Buncombe Technical College is to prepare students through practical education to meet the demands of changing technology and develop responsible attitudes and understanding necessary to function in a modern society.

Programs are designed to provide profitable skills for the untrained, augment the knowledge of those already trained, and offer the opportunity for retraining. Other programs enable adults who do not have primary, elementary, or secondary educational achievement to attain these levels. Interwoven is a belief in individual worth and a respect for individual differences.

In summary, Asheville-Buncombe Technical College shall serve as the occupational education link between the individual need and the employment opportunities.

PHILOSOPHY

It is the philosophy of Asheville-Buncombe Technical College that the cumulative efforts of the College program must serve the educational needs of the individual within the defined purpose and scope of the College program. Essential to this belief are the following.:

We believe that the College and the programs exist to serve the students and that all coordinated efforts should be devoted to meeting their needs. Our commitment includes recognizing the individual worth of each student, accepting

him at the level we find him, and assisting him in every way to attain his goals and objectives.

The College subscribes to the belief that in the decision-making process it is in keeping with the principles of democracy to involve those who are affected by the decision. Consequently, the students, faculty, staff, and the community must be considered in the formulation of the College policies and practices and are invited to participate.

In order to assure all an equal opportunity to learn and improve skills, to develop social abilities and responsible attitudes, our doors will never be closed to anyone of suitable age who can profit from our programs. We must take the people where they are and carry them as far as they can go within purpose and capabilities of the College. Limitations placed on the offerings and programs by facilities, staff, and requirements of certifying agencies should be the only factors restricting the total fulfillment of this phase of the College philosophy. The development of communicative skills and the effective creative use of leisure time will be reflected in College programs.

Inherently involved in the concept of the Open Door Policy and in the formulation of realistic goals are the processes of Guidance and Counseling. The College believes that adequate guidance and counseling services should be readily available to every applicant and should continue to be available to all students throughout their educational careers. We believe this service can best be provided by a coordinated effort of the personnel of student services and of faculty members. College personnel must realize that our educational programs and facilities may not meet the needs of every applicant—that is, we cannot be all things to all people. In such cases, College personnel should be capable of assisting the applicant in the selection of an appropriate social or educational agency designed to meet his particular needs.

The College is committed to the maximum utilization of its resources and to the greatest possible efficiency in their use. Consequently, many curriculums and many continuing education courses are offered during the evening hours, or by special arrangement, as well as during the day.

Asheville-Buncombe Technical College serves as an essential member of the regional economic development team. The College is primarily concerned with "Manpower" for economic development and strives to keep curriculums and courses in the mainstream of community needs.

The program of instruction should be constantly responsive to the needs of the students as well as present and prospective employers. It should thus be sufficiently flexible, both in curriculum and facilities to meet the needs under changing conditions.

The College believes that self-evaluation and institutional research provide the most effective base for responsible decision-making.

In our commitment to education, Asheville-Buncombe Technical College will not limit itself to the development of occupational skills, but will also be dedicated to the development of the total individual.

Periodic reviews of our College philosophy are essential in order to provide an education that is flexible, progressive, and sensitive to the changing needs and desires of our clientele.

DIVISIONAL OBJECTIVES

Allied Health: The Health Sciences provide qualified students with opportunities at the post-secondary level to acquire knowledge, skills, and attitudes which will enable them to become safe and effective members of the health care team.

Business Education: The objective of the Business Education Division is to provide practical dynamic college-level business training with emphasis on the development of desirable professional attitudes.

Continuing Education: Continuing Education will provide vocational education opportunities for the unemployed, upgrading courses for those already employed, adult basic education for those desiring a higher educational level, and certain avocational courses for individual enrichment.

Engineering Technology: The Engineering Technology Division provides a practical degree-granting education involving scientific and mathematical theory with specialized training in some specific branch of engineering technology to enable the graduate to apply established engineering principles in his field.

General Education: The General Education Division contributes to the growth of students for productive involvement and participation in a technological society by providing on the post-secondary level essential communicative and quantitative skills as well as an understanding of human relations and the human environment. This division also provides a degree granting program in Law Enforcement Technology with special emphasis in the social sciences and the necessary technical skills needed in law enforcement and related fields.

Hospitality Education: The Hospitality Education Division provides professionally oriented, post-secondary and college level training in various selected facets of the hospitality industry. These curricula are designed to reflect the ever-changing skills and attitudinal demands and needs of the industry.

Learning Resource Center: The Objectives of the Learning Resources Center (LRC) are to provide instruction and support service through a variety of print and non-print materials, equipment, learning activities, and production capabilities. These services are designed to assist faculty, students, and community patrons through three major areas, or components: The Library, Learning Laboratory, and Audio-Visual Services.

Vocational-Industrial Education: Vocational-Industrial Educational Curricula are diploma or technical diploma granting programs taught at the post-secondary level. They are designed to give the student practical education and applied training in the manipulative skills peculiar to a specific trade.

EVENING AND WEEKEND CURRICULUMS

Most of the curricular classes offered in the day are also offered on a part-time basis in the evenings or on the weekends. Classes meet both on campus and at various off-campus sites. In addition to classes in the formatted program plans, many single classes are offered for students who seek personal or career advancements. Beyond individual classes, students may "cluster" selected classes to meet more advanced goals. Any of these individually selected classes may be

undertaken by "special schedule" or "unclassified" students on a space-available basis if prerequisites have been met. Evening classes begin at 4:00 p.m. with the majority starting at 6:30 p.m. Requirements for degree and diploma are the same for day and evening programs.

LEARNING RESOURCES CENTER

The Learning Resources Center includes: THE LIBRARY, LEARNING LABORATORY, and AUDIO-VISUAL SERVICES. Together, they provide information; guidance in locating and utilizing a wide range of resource materials; provide a variety of equipment to supplement classroom and laboratory/shop experiences; assist with independent study and research.

THE LIBRARY: Under the direction of the Coordinator, Library Services, the Library makes available all of the LRC's collection of resource materials, both print and non-print. The major responsibility of the Library is to provide information services and assist the user with utilization of the collection. In addition, the Library provides a very attractive, well equipped facility for both scholarly and recreational reading and study.

HOURS:	Monday-Thursday	8:00 a.m.-10:00 p.m.
	Friday	8:00 a.m.-4:30 p.m.
	Closed weekends	

AUDIO-VISUAL SERVICES: Audio-Visual services are provided by the Coordinator, Audio-Visual Services and include production, materials, and equipment to support the instructional program and related activities. The LRC maintains an inventory of Audio-Visual equipment for loan to faculty and other authorized patrons.

THE LEARNING LABORATORY: The Learning Laboratory is an instructional component of the Learning Resources Center. It serves as the central focal point of instruction by providing a learning environment in which the student can be free to explore interests, with a learning pace and manner specifically tailored to individual needs.

The purpose of the Learning Laboratory is to assist an individual toward reaching educational or vocational objectives. Its services are designed to enrich college instructional programs and to upgrade academic skills. Special emphasis is placed on helping the handicapped person.

The Learning Laboratory is a GED Testing Center. The GED Test is administered once a week by appointment.

The Learning Laboratory is designed to help students:

1. increase their level of learning before entering a technical institute or college.
2. prepare for SAT, College admission exams, and CLEP.
3. prepare for the GED Test.
4. through the GED and Developmental Studies Programs for Veterans.
5. who need to fulfill entrance requirements for Associate Degree programs.
6. who need high school credit in algebra, geometry and biology as a prerequisite for colleges and universities.
7. who wish to reenter the business world or to change vocations.
8. pursue a high school diploma according to agreements between the college and public schools.

A student may begin in the Learning Laboratory at any time and proceed at his own learning rate. An instructor is always available to give assistance when needed and to determine if the student is making satisfactory progress.

HOURS: Monday-Thursday 8:00 a.m.-9:15 p.m.
Friday 8:00 a.m.-4:p.m.

There is no charge for study but there is a $5.00 fee to take the GED Test.

GUIDED STUDIES

This instructional component of the general education division provides students and prospective students with special counseling, assessment, and tutoring in the basic subjects of Math, English and Reading. Individual and group instruction, counseling and seminars are available in Study Skills, Career Development, and Human Development. The major objective of this program is to help individuals experience success at levels which will lead to successful achievement in ABTC's curriculum programs.

Guided Studies personnel are skilled in assessment techniques in the areas of intelligence, academic achievement, personality development, vocational interests, and aptitudes. These services are available for individuals and groups already enrolled in, or planning to enroll in curriculum programs at Asheville-Buncombe Technical College.

Current schedules for Guided Studies personnel may be obtained by contacting any member of the General Education Division.

HIGH SCHOOL EQUIVALENCY

An adult who has not completed high school may take a series of General Education Development (GED) tests. Upon attaining a passing score of 225 points with no single test score below 35, a High School Equivalency Certificate will be awarded. This certificate is generally accepted on a basis equal to a high school diploma for employment, promotion, or further education

The G.E.D. tests cover five broad areas: Writing Skills, Mathematics, Social Studies, Science, and Reading Skills. The test is administered in the Learning Lab at the College.

The following requirements must be met before taking the G.E.D. tests:

1. Minimum age: 18, 16 and 17 year olds may take the G.E.D. test with special permission.
2. Residence: current North Carolina resident.
3. Make application for tests on official blanks that are available in the Learning Lab.
4. Cost: There is a $5.00 fee to take the G.E.D. test.

An appointment must be made through the Learning Lab.

DIVISION OF CONTINUING EDUCATION

The concept of lifelong learning is implemented through continuing education classes at Asheville-Buncombe Technical College. These classes carry no credit toward a degree or diploma. They vary in length and are held wherever there is

available space and sufficient number of students. Individuals sixteen and seventeen years old may register for continuing education classes provided they have special permission and do not displace any interested adult.

Usually, the only cost of these courses is a nominal registration fee. In some, there is a charge for textbooks or materials used in the course. North Carolina residents 65 years of age and older are exempt from the registration fee.

Classes are divided into four general areas:
ACADEMIC: Languages, economics, sociology, psychology, etc.
AVOCATIONAL: Ceramics, general crafts, photography, etc.
PRACTICAL SKILLS: Sewing, cooking, floral design, mechanics, etc.
OCCUPATONAL: Business courses, food service, law enforcement, health occupations, electricity, insurance, etc.

ADULT BASIC EDUCATION AND ADULT HIGH SCHOOL

The Adult Basic Education (ABE) program is designed for adults who are functioning at or below the eighth-grade educational level. The program assists adults with the necessary skills to cope with contemporary society, to receive training for employment opportunities, and to raise their functional academic level. Free classes offer the opportunity to study basic reading and writing, English, reading comprehension, math, social studies, and science. The program can assist an adult in preparing to enter the Adult HIgh School program which prepares individuals to take the high school equivalency (GED) exam.

Classes usually meet twice a week and a person may enroll at any time. Additional classes can be started in almost any location where there is a sufficient number of interested adults.

All materials are designed for adults with emphasis on individual needs and interests. In the Adult High School program, students may pay a nominal book fee. At all levels, instruction is closely related toward helping the student function better in today's society.

HUMAN RESOURCES DEVELOPMENT

The Human Resources Development program is located in Magnolia Building on the A-B Tech. campus. Since 1973, the program has been one of several being offered under the auspices of the State Board of Education through the Department of Community Colleges with special funding by the North Carolina General Assembly.

Students who meet the enrollment guidelines for this training are given six to eight weeks of classroom instruction and supervision with a 30-hour weekly schedule. Each is given a combination of group counseling and job preparation activities with individual instruction in obtaining or improving basic functional and life coping skills. A career development staff assists the students in obtaining realistic goals of job placement or further vocational training. To meet local employment needs, intensive training in one particular skill is offered during each class cycle.

Students certified as eligible for this training under federal guidelines, may receive a needs base payment during their efforts to become self-sufficient citizens.

Priority is given to those with multiple disadvantages including:

1. Disadvantaged female heads of households
2. Veterans
3. Physically handicapped or disabled
4. Economically and educationally disadvantaged
5. Ex-offenders

Applications may be made daily at the Manpower building on campus during regular school hours.

NEW AND EXPANDING INDUSTRY TRAINING

The purpose of the Industry Services Division of the Community College System is to train a skilled production work force for a new or expanding industry. Recognizing that the recruitment and training of new employees is one of industry's most perplexing problems, North Carolina was the first state in the Southeast to establish a planned system of industrial manpower training, and A-B Tech was one of the first to offer this program.

Because it is a customized service, based on the unique requirements of a particular company, A-B Tech can provide training for any industrial job that can be defined and arranged into a logical learning sequence. The final training program design is the result of joint study, planning, and implementation by company personnel, industrial training specialists, and A-B Tech personnel.

STUDENT INFORMATION

NON-DISCRIMINATION POLICY

Asheville-Buncombe Technical College does not discriminate on the basis of sex, race, ethnic origin, age, handicap, or religion, in the educational programs or activities which it operates. The College is required by Title IX of the Education Amendment of 1972 not to discriminate on the basis of sex, and other Federal legislation not to discriminate on the basis of race, ethnic origin, age, handicap, or religion. The requirement not to discriminate in education programs and activities extends to employment in the College and to admission into its programs. Inquiries or complaints concerning the application of Title IX and other Federal non-discrimination legislation to Asheville-Buncombe Technical College should be referred to:

Jane G. Smith, Director of Personnel
Asheville-Buncombe Technical College
340 Victoria Road
Asheville, North Carolina 28801
Thomas W. Simpson Administration Building
Telephone: (704) 254-1921

GENERAL ADMISSION REQUIREMENTS AND PROCEDURES

Asheville-Buncombe Technical College has an "OPEN DOOR" admission policy. High school graduation or equivalent is normally required for admission to any curriculum; however, there are also programs for non-graduates 18 years of age or older. The College begins accepting applications on September 15 and early application is advised for many programs. Admission to some curricula is competitive among qualified applicants according to established criteria.

Individually selected classes may be taken by "Special Schedule" or "Unclassified" students, providing the prerequisites have been met and space is available. Students completing 30 hours as an "unclassified" student must complete curriculum admission requirements before registering for additional courses.

Placement into a specific course of study is based upon standards which will help to assure the applicant's success in that course of study. Those who do not yet possess the background required by the course of study of their choice may be enrolled in preparatory courses designed to provide this background.

Educational background, interest, motivation, experience and aptitudes will be considered when an application is submitted to the College.

Persons wishing to enroll in a **curriculum program** at the College must complete the entire application process and meet requirements as follow:

1. Submit an application form.
2. Obtain transcripts of credits from all secondary and post-secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of admission and placement tests administered by the College. Student suitability for admission to individual programs will be determined by scores on the tests and specific program requirements (See

programs for details). Requests for test exemption by transfer or special students will be reviewed individually.

4. Have a personal interview with the student services staff and representative of the major department.
5. Applicants should be in good health with no impairment of vision or other physical defect which would restrict ability in a particular field of work. A complete physical examination may be required.

Upon receipt of the completed application form the College will schedule a date for test administration and notify the applicant by mail.

Upon completion of the above procedure, each applicant will receive written notification of the action taken.

COUNSELING AND TESTING

Testing will be completed prior to acceptance and registration. The counselor will schedule interviews with students concerning interpretation of their test scores and will advise students concerning course selections. Additional aptitude tests may be desirable to determine individual ability. Applicants are encouraged to enroll in programs when it is believed that the student has made a sound choice and will profit from the selected program.

Students are encouraged to use the counseling services at any time. The counseling service will work at all times with individuals to keep them informed of the progress they are making. Also, many reference materials are made available to students during the program through the counseling service.

TRANSFER CREDIT

CREDIT FROM OTHER INSTITUTIONS: Asheville-Buncombe Technical College will accept credit for parallel work completed in other North Carolina Technical Institutes, Technical Colleges, or Community Colleges and institutions accredited by a regional accrediting agency. Applicants who seek admission with advanced standing should make regular application and obtain from the Admissions Office a "Request for Transfer Credit" form for the evaluation of all post-secondary work. PLEASE NOTE: TRANSCRIPTS WILL **NOT** BE EVALUATED UNTIL THIS FORM HAS BEEN COMPLETED. No credit will be granted for work below a "C" or the average grade given by the other institution. Credit will be for course work only without grades or quality points. Proficiency credits from other institutions will not be accepted.

INTERNAL TRANSFER OF CREDIT: Students who drop out and return, change majors, or return from suspension will have their former A-B Tech work evaluated as follows:

1. Graduates of A-B Tech who return to the college for another program will have their former work evaluated according to the procedures for CREDIT FROM OTHER INSTITUTIONS.
2. Non-graduates and suspended students who return after being out of school at least three consecutive quarters will have their transcript re-evaluated. All courses applicable to the requirements of the current program, according to the current catalog* and having passing grades will be transferred or carried forward with existing grades. For courses passed with a grade of D,

THE STUDENT HAS AN OPTION OF REPEATING THE COURSE OR APPLYING IT TO THE CURRENT MAJOR. (A minimum grade of C is required in all major area courses for graduation.)

3. Non-graduates who change programs without being out of school for three consecutive quarters will have their transcript evaluated. All courses applicable to the requirements of the current program, according to the current catalog,* will be transferred or carried forward with existing grades.
4. Non-graduates returning to continue their program of study after being out of school less than three consecutive quarters will not have their transcript evaluated.
5. The initial grade point average will be determined by the courses and corresponding grade applied toward the current major.
6. Exceptional cases will be handled at the discretion of the Vice President of Instructional Services.
7. This process will be completed during the first quarter of reenrollment.

*"Current catalog" is defined as the current first year catalog if the student does not graduate with his/her class and/or returns with one-half or less of the credit hours required for graduation (64 technical, 32 vocational). If the student has more than one-half of the credit hours required, current catalog is defined as the current second year catalog.

TRANSFER OF CREDIT TO OTHER INSTITUTIONS: Asheville-Buncombe Technical College provides a very distinct option at the end of its two-year associate degree programs. Graduates have the option of entering a career, continuing their education at a senior institution, or doing both. We are proud of the fact that our graduates have a marketable job skill after two years of study and can also complete a four-year degree after two more years of academic work.

Students who attend most senior institutions do not declare a major until their junior year. Our programs are such that those students who earn a baccalaureate degree pursue it in an inverted pattern. The majority of the student's academic major is earned at Asheville-Buncombe Tech in their first two years of study. As junior level students at the senior institution, they take general university requirements and may take more advanced courses relating to their major.

Parallel work completed at Asheville-Buncombe Tech will transfer to other institutions in the North Carolina Community College System and to most senior institutions in the region. The college has formal transfer agreements and understandings with many senior institutions in Western North Carolina and beyond. The following institutions are among the many four-year institutions that regularly accept credits from Asheville-Buncombe Tech and generally enter the graduates at the junior level:

Appalachian State University
East Tennessee State University
Mars Hill College
Shaw University
Southern Technical Institute
The University of North Carolina—Asheville
The University of North Carolina—Charlotte
The University of Tennessee—Knoxville
Warren Wilson College
Western Carolina University

The details of these affiliations are available from Asheville-Buncombe Tech and the individual senior institutions.

Asheville-Buncombe Tech strongly encourages its graduates to continue their formal education after completion of their Asheville-Buncombe Tech program. It is important that graduates recognize the need to continue their education throughout life to prepare for new and changing careers.

CREDIT BY EXAMINATION

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar college level credits, record of military study, certification or license, standardized test scores including CLEP, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Registrar.

Proficiency examinations will be comprehensive and approved by the supervisor of the instructor administering the exam. The examination may be oral, performance, written, or a combination of these methods. To receive credit by examination, the score must be above average (B). The decision of the examining instructor will be final. No quality points will be awarded for credit by examination.

A student who fails a challenge exam in a course may not take another challenge exam for credit in that course.

Because of specific requirements, credit for certain courses may not be received by proficiency examination. The courses which may not be challenged by examination are marked with an asterisk in the course description section of the catalog.

The following procedure must be used by students who request a proficiency examination:

1. Enroll as a credit student in the course to be challenged and pay tuition if enrolled on a part-time basis. There is no extra charge for full-time students.
2. Present evidence of proficiency, complete the written request form, and have the request approved within the first ten (10) days of the quarter.
3. Remain enrolled and attend class until the examination is administered on or after the eleventh (11th) day of the quarter. During this period, students who have written approval for the exam may attend class without purchasing textbooks and materials. If books are purchased and returned for refund, they must be in *new* condition.
4. Students who are very confident of passing the exam may choose to begin with a course overload.
5. Students who perform on the exam at a level sufficient to get credit may drop the course and have an indication of Proficiency Credit (P) posted to their record for the course. Receiving proficiency credit does not entitle the student to a tuition refund.
6. Students who do not receive credit by the examination are encouraged to purchase textbooks and materials and remain in the class to earn credit at the end of the quarter.

7. Students who receive financial assistance of any type are required to inform the director of their assistance program that they are seeking proficiency credit. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination. Students may choose to overload in this case.

Any exceptions to these procedures must have prior written approval by the Dean, Instructional Services and the appropriate Division Director and Department Chairperson.

AUDITING COURSES

Students who wish to audit courses must register through regular registration procedures and must have approval of the department chairperson responsible for the particular course. Audit students do not receive credit but must adhere to attendance regulations. An audit intention cannot be changed to credit course after the fifth class day nor can credit courses be changed to audit courses. Audit work cannot be used toward diploma or degree requirements. (Audit students will enter class after all curriculum students have been registered, precluding audit students from taking the place of curriculum students).

NORTH CAROLINA RESIDENCY

In order to qualify for the resident tuition rate, North Carolina law (G.S. 116-143.1) requires that "*a legal resident* must have maintained his domicile in North Carolina for at *least the twelve months immediately prior* to his classification as a resident for tuition purposes."

One must also have accomplished many of the things normally done by one who intends to reside in a state permanently. Examples of these actions are: employment, paying taxes, having a current NC driver's license, voting in the state, belonging to churches, clubs or other organizations. Anyone having a question regarding resident status should contact Student Services.

TUITION

Full-time students per quarter	$ 51.00
Non-Resident of N.C. (12 or more credit hours)	$255.00
Part-time per credit hour per quarter	$ 4.25
Non-Resident of N.C. (less than 12 credit hours)	$ 21.25
LATE REGISTRATION FEE	$ 5.00

North Carolina residents 65 years of age and older are exempt from the payment of curriculum tuition and extension registration fees.

STUDENT ACTIVITY FEE

A $16.00 activity fee is collected from all full-time day students during the Fall Quarter registration which entitles the student to participate in all activities during

the school year. Full-time day students enrolling for less than the full school year will pay on the following basis:

Fall Quarter	$6.00
Winter Quarter	5.00
Spring Quarter	5.00

Evening and special schedule students may participate in activities by paying an admission fee established for each event.

STUDENT INSURANCE

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to insure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy, providing the desired insurance protection, will be maintained in effect by the College and all students will be REQUIRED to subscribe to such coverage. The cost of accident insurance to the student will be approximately $3.50 per year.

STUDENT FINANCIAL AID

The purpose of the financial aid program at Asheville-Buncombe Technical College (ABTC) is designed primarily to provide assistance to students who, without such aid, would be unable to attend the College. The program is committed to the philosophy that no eligible student should be denied access to a higher education because of a lack of financial resources.

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources and that the student will avail himself to any other financial assistance which is available.

Students desiring financial aid for an academic year (September thru August) are encouraged to apply early (January thru March) to be given priority consideration for the funds available. Applications will be processed until all available funds are awarded.

Copies of all applications mentioned in the following procedure may be obtained from any high school guidance office, most college and university financial aid offices, or the ABTC Financial Aid Office.

APPLICATION PROCEDURE

All applicants desiring priority consideration for available financial aid funds **must** complete the numbered steps below.

1. Before applying for financial aid it is advisable that each applicant complete the first three (3) steps of the Admission Procedure. (See the Table of Contents for the Admission Requirements and Procedures page reference.)
2. The applicant **must** complete and mail a Family Financial Statement (FFS) to: ACT Student Need Analysis Services, P.O. Box 1013, Iowa City, Iowa

52243. The form will be in the FFS Packet circulated by American College Testing (ACT).

3. In completing the FFS, the applicant **must** indicate that a copy be sent to ABTC, code 3063, and College Foundation North Carolina Student Incentive Grant Program (NCSIG).
4. All applicants **must** complete the appropriate section of the FFS requesting that the financial data on the FFS be used to determine their Pell Grant eligibility. (Note: The FFS is to be used in applying for the Pell Grant).

Following the processing of the FFS, the applicant will receive a Student Financial Aid Report (SFAR) to review and correct (if necessary). The SFAR is simply a printout of the data reported by the applicant's family on the FFS. The applicant will also receive the Pell Grant Student Aid Report (SAR). The SAR **must** be forwarded by the applicant to the Financial Aid Office without delay.

Once the (a) Pell Grant Student Aid Report, (b) the NCSIG results and (c) the FFS results are received by ABTC's Financial Aid Office, the applicant's financial need will be determined. Official notification of awards is made no earlier than June 1st prior to enrollment. Each award is contingent upon the availability of funds.

(Important: The above procedure is identical for both in-state and out-of-state applicants; however, out-of-state applicants are not eligible to apply for NCSIG consideration but should apply for a state grant thru their state of legal residence.)

Students desiring additional information about the Financial Aid Program at ABTC are urged to write or phone: Director of Financial Aid, Asheville-Buncombe Technical College, 340 Victoria Road, Asheville, NC 28801, 704/254-1921, extension 160.

SATISFACTORY PROGRESS STANDARDS FOR FINANCIAL AID

Introduction: The Higher Education Act of 1965, as amended by Congress in 1980, mandates institutions of higher education to establish minimum standards of "satisfactory progress" for students receiving financial aid. For the purpose of maintaining a consistent policy for all students receiving financial aid administered by the College's Financial Aid Office, these standards are applicable to all financial aid programs including all Federally sponsored Title IV programs.

Satisfactory Progress Defined: To initially receive or continue to receive financial aid, a student must demonstrate satisfactory progress as defined in the GENERAL COLLEGE ACADEMIC STATUS section of the catalog and meet the following conditions: The maximum enrollment time frame for the curriculum must not be exceeded. The maximum enrollment time frame for this purpose is defined as the equivalent of twice the number of academic quarters, as outlined in the College catalog, required of full-time students to complete a curriculum.

Policies and Procedures: The specific policies and procedures to be used in applying the satisfactory progress standards are outlined below:

1. Satisfactory progress will be evaluated prior to each payment period on a quarterly basis. (Exception: For the Guaranteed Student Loan and PLUS Loan Programs evaluation will be completed prior to certification of the loan application.)

2. Grades of "F", "I", "X", "U", "W", "P", and "Y" will not qualify as successful completion of credit hours attempted.
3. Repeated courses for which the student initially received a grade of "I", "X", "U", or "W" *and* was paid will not qualify for repayment. Likewise, courses repeated which were previously completed with an acceptable grade toward the College's graduation requirements will not qualify for repayment.
4. Transfer credits from other postsecondary institutions will not be used to determine satisfactory progress.
5. Courses taken, which are not required to meet the graduation requirements of the curriculum program for which a student is enrolled, do not qualify for payment.
6. A student who fails to demonstrate satisfactory progress as defined will forfeit all financial aid awarded and disbursements will be terminated.
7. The maximum enrollment time frame will be prorated for those students who enroll on a half time or three-quarter time basis.

Appeal of Financial Aid Termination: To appeal financial aid termination a student must be able to demonstrate mitigating circumstances. The procedure for appeal is:

1. A student will indicate *in writing* to the Director of Financial Aid the reasons why he/she did not make satisfactory progress *and* why financial aid should not be terminated. Documentation to support the appeal is permitted.
2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.
3. A student wishing to appeal the decision of the Director of Financial Aid, may do so, in writing to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made to the Academic Affairs Committee and finally through the Student Due Process Procedure, if deemed necessary by the student.

Reinstatement of Financial Aid Eligibility: Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory progress definition, termination will continue until the student enrolls for a subsequent academic term at his/her own expense and completes the term satisfying the satisfactory progress definition. Once the satisfactory progress definition is met eligibility is reinstated for the subsequent academic term. In addition, financial aid eligibility will immediately be reinstated for all appeals upheld.

REFUNDS

Two-thirds of the student's tuition may be refunded if the student officially withdraws within ten calendar days from the first day of class. No tuition refunds will be made after that time or for students who withdraw without authority or who are dismissed for cause.

Student activity and insurance fees are non-refundable.

ADDITIONAL COSTS

A beginning student should be prepared to incur additional estimated expenses during the academic year (4 quarters) as follows:

BUSINESS EDUCATION	
Books	$330-$470
Supplies	35- 185
ENGINEERING TECHNOLOGY	
Books	$300-$445
Supplies	95- 220
GENERAL EDUCATION	
Books (Law Enforcement Technology)	$335
Supplies (Law Enforcement Technology)	$100
HEALTH EDUCATION, ALLIED	
Books	$205-$375
Supplies	100- 325
HOSPITALITY EDUCATION	
Books	$195-$400
Supplies	55- 75
VOCATIONAL-INDUSTRIAL EDUCATION	
Books	$190-$290
Supplies	90- 505

Books and supplies costs vary from year-to-year by curriculum due to price changes, curriculum changes, and instructor preferences. For purposes of definition, the following items may be classified as supplies: pen, pencils, paper, notebooks, instruments, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, pins and caps. Students will incur most of the supply costs for their curriculum during the first quarter of study. Students are encouraged to consult with their Department Chairperson for actual costs of supplies for their curriculum.

It is recommended that students enrolling in the Business Division, Technical Division and some Departments of the Vocational Division purchase a small electronic calculator. Calculators will not be permitted in MAT 100, MAT 105 or MAT 1101. Students should consult with their Department Chairperson or a member of the Math Department prior to the purchase of a calculator.

BOOKSTORE

A bookstore is operated by the College for the convenience of students and staff members to provide required textbooks and materials. Students should plan to purchase all texts and materials at the beginning of each quarter.

Textbook costs vary considerably depending upon the curriculum and quarter. Book costs vary from year to year because of changes in curriculum book prices, texts and material requirements.

Application for Graduation/Cap and Gown Order Forms are collected by the bookstore in April. Graduation fees are due in May. Graduation invitations are also available in the bookstore.

PARKING

All students are required to register their vehicles and display parking permits.

CLASS ATTENDANCE

(**Class** includes lecture, shop, lab, clinic, etc.)

Regular and punctual class attendance is expected of all students for them to achieve their potential in the curriculum they have chosen and to develop desirable personal traits necessary to obtain employment after graduation. **Instructors and the college will keep an accurate record of class attendance.** Students who anticipate absence or tardiness should contact the instructor in advance if possible.

Instructional time missed because of circumstances beyond control of the student is considered to be excused. Justifiable reasons are:

1. Personal illness
2. Illness or death in immediate family
3. Necessary employment, civil, or military responsibilities (with documentation)
4. Official representative or participant in approved college activities
5. Emergencies including inclement weather

It is the responsibility of the student to account for instructional time missed and to make arrangements for makeups within 24 hours of returning to class. The instructor will determine if the instructional time missed is excusable. If the time is excused, the student will be permitted to make up missed work to the extent possible. Because of the nature of some learning experiences, especially shops, labs, and clinics, it is difficult if not impossible to duplicate the work of the class. The faculty has no obligation to assist with makeup for work missed for unexcused reasons.

Instructional time missed is a serious deterrent to learning. A student is responsible for fulfilling the requirements of the course by attending all classes (including shops, labs, and clinics) and completing course assignments. To receive course credit, a student should attend a minimum of 80 percent of the contact hours of the class. Upon accumulating absences exceeding 20 percent of the course contact hours, the student may be dropped from the class with a grade of "U" at the discretion of the instructor. Being late for class is also a serious interruption of instruction. A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies may constitute one absence.

EXAMPLES OF EXCESSIVE ABSENCES

Total Class Contact Hours	Excessive Hours Absence
33	7
44	9
55	11
66	13
77	15
Other Hours	Hrs. X 0.20 rounded

IT IS THE JOINT RESPONSIBILITY OF THE STUDENT AND FACULTY TO DISCUSS ATTENDANCE PATTERNS THAT ARE **APPROACHING** THE POINT WHERE A STUDENT MAY BE DROPPED FROM THE COURSE.

In some programs, absence or tardiness of an individual may be a major disruption to the performance of others in the class or an inconvenience to other organizations such as hospitals and clinics. In these programs, the faculty may require advanced notice of **any** attendance problems.

The student has the right to appeal to the Student Due Process Appeals Committee for problems with this regulation.

In the event that an instructor is not in class and arrangements have not been made, the class is dismissed after ten minutes. A roll must be signed by the students present and turned in to the Department Chairperson, Division Director, or Instructional Dean. Students enrolled in classes that meet for two or more hours and sign the roll and leave, must report to the classroom at the beginning of the second class hour. In the event that the instructor is not present for the second hour, the students again sign the roll and leave. If the course is scheduled for more than two hours, students will not be required to report to the classroom after the second hour.

STUDENT CONDUCT

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Each student shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicle traffic and parking, smoking, loitering, and other aspects of personal conduct must be stringently observed.

Students who violate the following standards will be referred to the Vice-President for Student Services for counseling and/or possible suspension or dismissal.

1. Being on campus under the influence of alcohol, drugs, narcotics, or controlled substances.
2. Stealing, cheating, gambling, fighting, profanity, boisterous language or actions, possession of alcohol, drugs, narcotics, controlled substance, firearms, dangerous weapons, or any unlawful conduct.

STUDENT LOUNGE

A snack-shop lounge is available. Other areas equipped with a variety of modern vending machines are provided for the convenience of students and faculty. Foods and drinks may not be taken into a classroom, shop or laboratory.

GRADING SYSTEM

Notice will be given to all students who are failing at mid-term and final grades will be issued at the end of the term to all students. Students will be graded on the acquirement of technical skills, ability to work under supervision, interest in

work, initiative, and the ability to apply related information. A student who wants to contest a grade must do so within six weeks of the awarding of the grade.

Students will be graded by the following system:

A	93-100	Excellent
B	86-92	Above Average
C	78-85	Average
D	70-77	Passing
F	Below 70	Unsatisfactory
I	Incomplete	
X	Continuing	
U	Unofficial Withdrawal—Penalty	
W	Withdrawal (Official)—No Penalty	
G	Graduate Transfer Credit—(Internal)	
P	Proficiency Credit	
T	Transfer Credit (External)	
Y	Audit	

I—Incomplete: Assigned when a student is unable to complete work or take a final examination because of illness or for other reasons over which the student has no control. An "incomplete" must be removed within the first six weeks of the next term. Otherwise, the grade becomes an "F".

X—Continuing: Assigned when a student is unable to complete work during the current quarter because of class scheduling over consecutive quarters or at the discretion of the instructor to allow additional time to complete work. A "contract" of conditions for completion and time limit, not to exceed twelve (12) months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of "X" are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period.

U—Given when the student WITHDRAWS UNOFFICIALLY. This is processed as a grade of "F" and will influence the quality point ratio.

W—Given when the student OFFICIALLY WITHDRAWS. This will not influence the quality point ratio.

WITHDRAWAL

To qualify for honorable dismissal or a tuition refund, if due, a student must obtain an official withdrawal by completing a "withdrawal request" form. The student must have the form signed by each instructor and return it to the office of Student Services. The student will receive a grade of W, which will not influence the quality point ratio for the quarter. Under normal circumstances official withdrawal from individual courses will **not** be allowed after the eighth week of the quarter.

Students who leave school entirely, who leave one or more courses without completing the above procedure, or who withdraw from individual courses after the eighth week of the quarter, will receive a grade of U, UNOFFICIAL WITHDRAWAL. A "U" WILL BE PROCESSED AS A GRADE OF "F."

QUALITY POINTS

At the end of each quarter quality points are assigned in accordance with the following formula. (The minimum grade-point ratio for graduation is 2.00 or an average of grade C.)

A — 4 quality points per credit hour
B — 3 quality points per credit hour
C — 2 quality points per credit hour
D — 1 quality point per credit hour
F — no quality points
I — no quality points
U, W — no quality points

Quality ratings are determined by dividing the total number of quality points by the number of hours attempted. A ratio of 2.00 indicates that a student has an average of C.

FAILURES

All failing grades in required courses must be removed before graduation. If a student fails a prerequisite course, it must be repeated successfully before beginning the next course. This could result in the student being enrolled for a longer period than is normally required to complete requirements for graduation.

As any courses are repeated, the new and recorded grades are compared. The higher of these becomes the official grade. Only a grade of "D or above" can replace an existing grade.

Students may be referred to the Admissions Committee for action if their effort and/or attitude is such that, in the judgment of their department chairperson, they cannot be successful in their studies.

GENERAL COLLEGE ACADEMIC STATUS

Good Standing: Good standing status permits curriculum enrollment for program course work at the College. Each of the following conditions must be met to be in good standing:

1. Former students must have graduated or be academically eligible to re-enter the College.
2. The student has not been suspended for disciplinary reasons.
3. The student has met all financial obligations to the College or has made satisfactory arrangements with the College to do so.

Satisfactory Progress: A curriculum student is making satisfactory progress toward completion of a diploma or a degree program if both of the following requirements are met:

1. A minimum 50% of the credit hours attempted during the last quarter of enrollment must be successfully completed. Successful completion for this purpose is defined as receiving a grade of "D" or better.
2. The cumulative quality point average must exceed the level that would result in academic suspension.

If a curriculum student is suspended academically for the first time and applies for admission as a "new" student in any program, the student is considered as

making satisfactory progress during the initial quarter provided the re-entry quality point average is sufficient to avoid probation. Re-entry status is determined by internal evaluation and transfer of credit. After the re-entry quarter, the first definition of satisfactory progress applies. If a student is suspended again and re-enters a second time, satisfactory progress is defined as having and maintaining a quality point average of 2.00 or better.

Student appeals will be heard by the Director of Financial Aid.

ACADEMIC PROBATION AND SUSPENSION

1. A student will be placed on academic probation if the following average is not maintained:

END OF QUARTER	MINIMUM CUMULATIVE QUALITY POINT AVERAGE
1	1.50
2	1.75
3 and following	2.00

2. A student will be suspended from the program if the cumulative quality point average is below:
   (a) the minimum requirement indicated above at the end of one quarter on probation.
   (b) 1.50 after attempting a minimum of 30 hours. This regulation also applies to students who have not declared a major. A student may appeal to the Admissions Committee for readmission. Appeals must be made in writing within two school days of notice of suspension. After receipt of the appeal, the Admissions Committee must meet and act within three school days.
3. Students placed on probation or suspension will be informed and counseled by the following means:
   1. Department Chairperson identifies and counsels the student by the first day of classes for the next term.
   2. Student Services notifies the student in writing.
   3. Students are counseled by Student Services.

CONDITIONS OF PROBATION

In an effort to assist the student in his academic progress, the following conditions of probation have been developed:

1. A student who is placed on probation will not participate in extracurricular activities. Extracurricular activities shall consist of: (a) Student Government Office (Elected); (b) Officers of Curriculum Clubs; (c) Yearbook Officers; (d) Off-Campus Activities That Require Missing More Than One Class Day in Succession; (e) Activities in Which the Student Officially Represents the College.
2. A student on probation will not participate in the College's intercollegiate athletic program.
3. The Department Chairperson will require a reduced course load and must approve the course schedule for the following quarter. Exceptions require the written approval of the department chairperson.

4. Academic progress must be reviewed with the Department Chairperson at mid-quarter.

CONDITIONS OF SUSPENSION

For those students who have not maintained satisfactory progress in their current curriculum, the following conditions of suspension apply:

1. Suspension from the curriculum is for one quarter. This condition also applies to students who have not declared a major.
2. A suspended student will only be permitted to take Guided Studies developmental work or repeat courses in which there has been unsatisfactory progress.
3. A student suspended from one curriculum may apply for another curriculum. Admission requirements of the "new" curriculum must be met. Permission to enter the curriculum as well as approval of individual courses to be taken must be granted by the Department Chairperson.

DEAN'S LIST

1. Only a full-time student is to be considered. (A full-time student is defined as a student enrolled in a curriculum program, carrying a minimum of 12 quarter hours, or the maximum number of hours scheduled for the curriculum.)
2. Student is to have a minimum 3.50 quality point average to qualify for the quarter under consideration.
3. Grades of F, I, X, U, or W will eliminate a student from the dean's list for that particular quarter. Students receiving credit for a course by examination are not affected.
4. The list will be compiled by the Registrar and sent to the Department Chairperson; The Vice-President, Instructional Services, will be responsible for final approval and publication on campus.
5. A draft of candidates for the Dean's List will be posted on major bulletin boards for students to review prior to publication. Students who withdraw from a course as a result of passing a proficiency examination, and are otherwise qualified for the Dean's List, should notify their major area department chairperson promptly if they are not listed.

DEGREES, DIPLOMAS AND CERTIFICATES

Degree Programs Defined

Asheville-Buncombe Technical College will confer an Associate in Applied Science degree in most Technical and Business Curriculums. This is conferred in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Diploma Programs Defined

Asheville-Buncombe Technical College will award a technical diploma for some programs. This diploma will be awarded in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied and will be presented as an "Associate of" in the specific curriculum area.

Asheville-Buncombe Technical College will award a Diploma in all Trade Curriculums. This diploma will be granted in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Certificates

Certificates are issued in the name of the Asheville-Buncombe Technical College to students who successfully complete any short term program or course.

NOTE: Records of progress are kept on all students. Progress records are furnished to any student or graduate upon written request.

REQUIREMENTS FOR GRADUATION

The College will hold one graduation ceremony each year. This will normally be the last Friday evening in August. To graduate with a diploma or degree, the following minimum requirements must be met:

1. Complete the requirements of a College approved program of study. Each course in the program of study must be completed by one of the following methods:
   a. Take the course at ABTC.
   b. Receive transfer credit.
   c. Take an ABTC proficiency exam.

   At least half of the credit hours in a program of study must be received at this College by taking courses and/or proficiency examinations.
2. Earn a grade of at least C in each course in the major and a minimum average of 2.0 (C) quality points on course work presented for graduation. Students completing their study with a grade point average of 4.0 will be graduated with highest honors. Those who have a minimum average of 3.75 will be graduated with high honors and a minimum of 3.50 has the distinction of honors.
3. Be in good standing and have the recommendation of the major course of study chairperson.
4. Submit an application for graduation to the book store before the published deadline date. Rent caps and gowns and purchase diplomas. (Prices may vary from year to year and do not include the purchase of optional items such as invitations or billfold diplomas.)
5. Fulfill all financial obligations to the College. Library clearance is also required.
6. Be present for graduation and attired in the proper academic robe. (Students who cannot attend graduation must submit to the President a written request to be excused two weeks prior to graduation.)

PLACEMENT SERVICE

No reputable college can guarantee jobs for graduates. However, the College will assist students and alumni in every possible way in obtaining suitable employment. The College provides placement service by working closely with local industries and the employment agencies. A Job Development specialist is available in Student Services to assist with full or part-time employment for current students and alumni.

DIVISION OF BUSINESS EDUCATION

A.A.S. DEGREE CONFERRED

The following areas of study are included in the Division of Business Education.

Business
- Accounting
- Banking and Finance
- Business Administration
- Industrial Management
- Manufacturing Resources Planning
- Marketing and Retailing

Electronic Data Processing
- Business Computer Programming

Office Education
- Secretarial—Executive/Information Management
- General Office
  - Data Support
  - Word Processing

All of the areas of study in the School of Business Education are seven quarters in duration and will require from twenty to thirty hours per week of course work. If a student elects to enroll in the Division of Business Education through the Evening School, the time required for completion will be extended.

BUSINESS PROGRAMS

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this state, business has become more competitive and automated. Better opportunities in business will be filled by people with specialized education beyond the high school level. The Business curricula are designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in every phase of administrative work that might be encountered in the average business.

The Business Division offers a flexible approach to meeting individual career objectives. During the first three quarters, the student enrolls in a common core of courses. With the assistance of faculty advisors, the student is expected to explore career opportunities available in the business world. Beginning in the fourth quarter, the student will take certain courses and complete his/her schedule in an area of concentration which will meet individual career objectives.

Each student will be assigned an advisor and will be counseled prior to pre-registration. The student must have departmental approval of his/her schedule prior to registration.

The A.A.S. degree will be awarded to a student meeting College requirements and completing required courses.

Objectives of Programs

The objectives of the Business Programs are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations and utilizations of modern methods for adequate decision making.
2. An understanding of our American economic system through the study of macroeconomics; a study and analysis of the role of finance, and of marketing to include product, place, promotion, and price.
3. Knowledge in specific elements of accounting, banking and finance, marketing, industrial management, postal service management, as indicated by the student's academic choices.
4. Understanding and skill in effective communications for business.
5. Knowledge of human relations as they apply to successful business operations in our economy.

BUSINESS ADMINISTRATION

The Business Administration curriculum is designed to prepare an individual for entry into middle-management occupations in various businesses and industries. The curriculum provides an overview of the business and industrial world—its organization and management.

The purpose of the curriculum will be fulfilled through courses designed to develop competency in: (1) understanding the principles of organization and management in business operations, (2) utilizing modern techniques to make decisions, (3) understanding the economy through study and analysis of the role of production and marketing, (4) communicating orally and in writing and (5) interpersonal relationships.

Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in middle-management activities in business or industry.

Job Opportunities

Entry Level

Purchasing Agent
Sales Manager
Public-Relations Representative
Sales-Service Promoter
Training Representative
General Supervisor
Credit Card Operations Manager
Operations Officer
Loan Officer
Volunteer Services Supervisor
Customer Services Manager
Residence Supervisor

Advanced Level

Personnel Manager
Credit & Collection Manager
Customer Service Manager
Branch Manager
Production Superintendent
Traffic Manager
Credit Union Manager
Housing Project Manager
Market Manager
Loan Counselor
Office Manager
Warehouse Manager

Business Administration

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	Business Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	110	Business Machines	1	2	2
BUS	121	Accounting II	3	2	4
ECO	105	Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			15	4	17
Third Quarter (Spring)					
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MAT	112	Mathematics of Finance	3	2	4
			14	8	18
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			10	2	11
Fifth Quarter (Fall)					
BUS	123	Finance I	5	0	5
IFM	200	Microcomputer Operations	2	2	3
			7	2	8
Sixth Quarter (Winter)					
BUS	229	Taxes I	3	2	4
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	3	0	3
			9	2	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Seventh Quarter (Spring)					
BUS	233	Personnel Management and Supervision	3	0	3
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			11	0	11
		Program Totals	81	22	119*

* Business Administration Students must take a minimum of 27 additional credit hours of business and support courses to be selected with the faculty advisor.
Total credit hours 119.

ACCOUNTING

The purpose of the Accounting curriculum is to prepare the individual to enter the accounting profession through study of accounting principles, theories and practices with related study in law, finance, management and data processing operations.

The curriculum is designed to prepare the individual for entry-level accounting positions, such as junior accountant, bookkeeper, accounting clerk, cost clerk, payroll clerk and related data processing occupations.

With experience and additional education, the individual will be able to advance to positions such as systems accountant, cost accountant, budget accountant and property accountant.

Job Opportunities

Entry Level	**Advanced Level**
Accountant	Budget Accountant
Estimator	Cost Accountant
Bookkeeper I	Property Accountant
Bookkeeping-Machine Operator I	Systems Accountant
Accounting Clerk	Bookkeeper II
	Bookkeeping-Machine Operator II

Accounting

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	Business Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	110	Business Machines	1	2	2
BUS	121	Accounting II	3	2	4
ECO	105	Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			15	4	17
Third Quarter (Spring)					
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MAT	112	Mathematics of Finance	3	2	4
			14	8	18

			Hrs. Per Week Class	Lab	Credit Hrs.
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	122	Accounting III	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			13	4	15
Fifth Quarter (Fall)					
BUS	123	Finance I	5	0	5
BUS	223	Intermediate Accounting	5	0	5
BUS	225	Cost Accounting I	5	0	5
IFM	200	Microcomputer Operations	2	2	3
			17	2	18
Sixth Quarter (Winter)					
BUS	226	Cost Accounting II	3	2	4
BUS	229	Taxes I	3	2	4
BUS	269	Auditing	5	0	5
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	4	19
Seventh Quarter (Spring)					
BUS	230	Taxes II	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			14	2	15
		Program Totals	105	28	119

BANKING AND FINANCE

The purposes of the Banking and Finance curriculum are: (1) to prepare the individual to enter the banking and finance industries, (2) to provide an educational program for the banking employees wanting to receive the American Institute of Banking certificate, and (3) to provide an educational program to upgrade or retain individuals presently employed in the banking or finance industry.

These purposes will be fulfilled through study in areas such as banking and finance principles, theories and practices; teller operations; lending and collections procedures, financial analysis, marketing and public relations.

This curriculum will provide the opportunity for an individual to enter a variety of banking or finance jobs in retail banks, commercial banks, government lending agencies, mortgage banks and credit companies.

Job Opportunities

Entry Level

Accounting Clerk
Teller
General Clerk
Collector and Adjuster

Advanced Level

Branch Manager
Departmental Manager, Advertising
Departmental Manager, Budget
Departmental Manager, Personnel and Training
Banking Staff Assistant

Banking and Finance

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	Business Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	110	Business Machines	1	2	2
BUS	121	Accounting II	3	2	4
ECO	105	Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			15	4	17
Third Quarter (Spring)					
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MAT	112	Mathematics of Finance	3	2	4
			14	8	18

			Hrs. Per Week Class	Lab	Credit Hrs.
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	122	Accounting III	3	2	4
BUS	206	Banking and Finance Credit	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			16	6	19
Fifth Quarter (Fall)					
BUS	123	Finance I	5	0	5
BUS	207	Principles of Bank Operations	5	0	5
BUS	238	Consumer Behavior	5	0	5
IFM	200	Microcomputer Operations	2	2	3
			17	2	18
Sixth Quarter (Winter)					
BUS	229	Taxes I	3	2	4
BUS	248	Marketing Research	3	2	4
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	3	0	3
			12	4	14
Seventh Quarter (Spring)					
BUS	208	Financial Statement Analysis	5	0	5
BUS	233	Personnel Management and Supervision	3	0	3
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			16	0	16
		Program Totals	105	28	119

INDUSTRIAL MANAGEMENT

The Industrial Management curriculum is designed to provide an individual with the ability to function effectively in supervisory and middle-management positions in industry. This program emphasizes study and application in areas such as business and industrial management, production methods and schedules, inventory control, work analysis, motivation techniques and human relations.

This curriculum is designed to prepare the individual to enter supervisory or middle-management positions, to provide an educational program for upgrading or retraining, and to provide an opportunity for the individual wanting to fulfill professional or general interest needs.

Job Opportunities

Entry Level
First-Line Supervisor
Production Control Technician
Engineering Assistant
Time-Study Technician
Methods Technician
Inventory Control Technician
Shipping Supervisor
Quality Control Technician

Advanced Level
Plant Manager
Production Control Manager
Materials Manager
Personnel Manager
Quality Control Manager

Industrial Management

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	Business Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	110	Business Machines	1	2	2
BUS	121	Accounting I	3	2	4
ECO	105	Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			15	4	17
Third Quarter (Spring)					
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MAT	112	Mathematics of Finance	3	2	4
			14	8	18

			Hrs. Per Week Class	Lab	Credit Hrs.
Fourth Quarter (Summer)					
ISC	102	Industrial Safety	3	0	3
BUS	114	Business Law	5	0	5
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			13	2	14
Fifth Quarter (Fall)					
ISC	202	Quality Control	3	2	4
ISC	209	Plant Layout	1	4	3
BUS	123	Finance I	5	0	5
IFM	200	Microcomputer Operations	2	2	3
			11	8	15
Sixth Quarter (Winter)					
ISC	203	Time and Motion Study	1	4	3
BUS	229	Taxes I	3	2	4
BUS	249	Inventory Control	3	0	3
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	3	0	3
			13	6	16
Seventh Quarter (Spring)					
ISC	211	Work Measurement	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			14	2	15
		Program Totals	95	34	112

MARKETING AND RETAILING

The Marketing and Retailing curriculum is designed to prepare the individual for entry into middle-management positions in various marketing and retailing businesses and industries. This purpose will be fulfilled through study and application in areas such as marketing and merchandising techniques, management, selling, advertising, retailing and credit and collection procedures.

Through knowledge and skills the individual will be able to perform marketing and distribution activities and through the development of personal competencies and qualities will be provided the opportunity to enter an array of marketing and distribution jobs.

Job Opportunities

Entry Level	Advanced Level
Display Person	Advertising Manager
General Salesperson	Display Manager
Assistant Buyer	Store Manager I
Junior Executive	Buyer I
Trainee Manager	Department Manager
	Merchandising Manager

Marketing and Retailing

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	Business Mathematics	5	0	5
			15	4	17
Second Quarter (Winter)					
BUS	110	Business Machines	1	2	2
BUS	121	Accounting II	3	2	4
ECO	105	Economics	5	0	5
ENG	102	Composition	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			15	4	17
Third Quarter (Spring)					
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MAT	112	Mathematics of Finance	3	2	4
			14	8	18

			Hrs. Per Week Class	Lab	Credit Hrs.
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	206	Banking and Finance Credit	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			13	4	15
Fifth Quarter (Fall)					
BUS	123	Finance I	5	0	5
BUS	238	Consumer Behavior	5	0	5
BUS	241	Retailing	3	0	3
IFM	200	Microcomputer Operations	2	2	3
			15	2	16
Sixth Quarter (Winter)					
BUS	229	Taxes I	3	2	4
BUS	237	Advertising	5	0	5
BUS	248	Marketing Research	3	2	4
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	3	0	3
			17	4	19
Seventh Quarter (Spring)					
BUS	233	Personnel Management and Supervision	3	0	3
BUS	247	Insurance	5	0	5
BUS	266	Professional Sales Techniques	3	0	3
ENG	103	Report Writing	3	0	3
			14	0	14
		Program Totals	103	26	116

MANUFACTURING RESOURCES PLANNING

Manufacturing Resources Planning is a curriculum designed to introduce the student to the different functions involving manufacturing and selling a product. This training will scan the field from marketing to master scheduling.

The graduate, in addition to being able to demonstrate an understanding of systems found in manufacturing, will have a knowledge of the computer as an integral job tool, will gain a knowledge of entry level shop floor scheduling, production planning, and inventory control functions, along with master scheduling duties.

Job Opportunities

Inventory Control Manager
Production Manager
Purchasing Coordinator
Materials Supervisor
Scheduler

APICS Certification

To become a part of the manufacturing community, the student is encouraged to join the Asheville Chapter of the American Production and Inventory Control Society and to sit for APICS certification test modules at the completion of each course represented by a test module. Certification is available in:

Materials Requirements Planning	(MRP 103)
Inventory Management	(MRP 105)
Master Planning	(MRP 203)
Capacity Management	(MRP 201)
Shop Floor Control (retitled Production Activity Control)	(MRP 207)

Manufacturing Resources Planning

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
MRP	101	Manufacturing Resources Planning I	4	0	4
BUS	101	Introduction to Business	3	0	3
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamental of English	3	0	3
MAT	100	Basic Math	5	0	5
			16	2	17
Second Quarter (Winter)					
MRP	102	Manufacturing Resources Planning II	4	0	4
BPR	111	Blueprint Reading	1	2	2
ECO	102	Economics	3	0	3
EDP	104	Introduction to Business Data Processing	2	2	3
MAT	101	Algebra and Trigonometry I	5	0	5
			15	4	17

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
MRP	103	Materials Requirements Planning	4	0	4
BUS	140	Accounting Concepts for Manufacturing/Industry	3	2	4
BUS	235	Business Organization and Management	3	2	4
ENG	102	Composition	3	0	3
MAT	214	Statistics	5	0	5
			18	4	20
Fourth Quarter (Summer)					
MRP	105	Inventory Management	4	0	4
BUS	222	Control Accounting	3	2	4
BUS	239	Introduction to Marketing	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MEC	111	Manufacturing Processes	3	3	4
			14	9	18
Fifth Quarter (Fall)					
MRP	201	Capacity Management	4	0	4
MRP	203	Master Planning	5	0	5
MRP	205	Methods, Standards, Routings	4	0	4
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			19	0	19
Sixth Quarter (Winter)					
MRP	207	Shop Floor Control	4	0	4
MRP	209	Factory Layout and Design	3	0	3
MRP	211	Purchasing	4	0	4
ENG	103	Report Writing	3	0	3
IFM	200	Microcomputer Operations	2	2	3
			16	2	17
Seventh Quarter (Spring)					
MRP	216	Advanced Projects	3	0	3
MRP	217	Certification Review	2	0	3
			5	2	6
		Program Totals	103	23	114

Business Computer Programming

The primary objective of the the Electronic Data Processing—Business curriculum is to prepare individuals for gainful employment as computer programmers. The objective is fulfilled through study and application in areas such as computer and systems theories and concepts, data processing techniques, business operations, logic, flow charting, programming procedures and languages and types, uses and operation of equipment.

Entry-level jobs as computer programmer and computer programmer trainee are available. With experience and additional education, the individual may enter jobs such as data processing manager, computer programmer manager, systems analyst and systems manager.

Job Opportunities

Entry Level

Computer Programmer
Computer Programmer Trainee
Computer Operator
Information Systems Programmer
Process Control Programmer
Detail Programmer

Advanced Level

Data Processing Manager/ Supervisor
Computer Operations Manager/Supervisor
Chief Business Programmer
Data Processing Programmer/Analyst

Computing Facilities

Students in Business Computer Programming have hands-on access to an IBM System-36 modular network including: 18 IBM-PC workstations, 5 printers, 200 megabytes of hard-disk storage, and related peripherals. There are several other computer labs available to students for instruction and individual use.

Business Computer Programming

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
EDP	104	Introduction to Business Data Processing	2	2	3
BUS	101	Introduction to Business	3	0	3
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
			14	4	16
Second Quarter (Winter)					
EDP	107	Operating Systems	3	2	4
EDP	115	Program Design and Development	4	0	4
BUS	120	Accounting I	3	2	4
IFM	100	Computer Keyboarding	1	2	2
MAT	101	Algbra and Tigonometry I	5	0	5
			16	6	19

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
EDP	200	Introduction to Microcomputers	2	2	3
BUS	121	Accounting II	3	2	4
MAT	102	Algebra and Trigonometry II	5	0	5
PSY	206	Applied Psychology	3	0	3
			13	4	15
Fourth Quarter (Summer)					
EDP	201	Advanced Microcomputers	2	2	3
EDP	208	Commercial BASIC	2	2	3
ECO	102	Economics I	3	0	3
ENG	102	Composition	3	0	3
MAT	214	Statistics	5	0	5
			15	4	17
Fifth Quarter (Fall)					
EDP	218	Programming I - RPG II	4	0	4
EDP	219	Programming II - RPG II	1	3	2
BUS	222	Control Accounting	3	2	4
ENG	204	Oral Communications	3	0	3
MAT	112	Mathematics of Finance	3	2	4
			14	7	17
Sixth Quarter (Winter)					
EDP	118	Database Management Concepts	3	2	4
EDP	215	Programming I - COBOL	4	0	4
EDP	216	Programming II - COBOL	1	3	2
EDP	220	Systems Analysis and Design	2	3	3
			10	8	13
Seventh Quarter (Spring)					
EDP	160	EDP Operations	2	2	3
EDP	221	Advanced Projects	1	3	2
BUS	234	Introduction to Management	3	2	4
ECO	107	Consumer Economics	3	0	3
ENG	103	Report Writing	3	0	3
			12	7	15
		Program Totals	94	40	112

OFFICE EDUCATION

The Office Education Department endeavors to teach students those skills and attitudes necessary to staff positions found in any type of office.

The student may choose one of two approaches to achieve this goal: Secretarial-Executive/Information Management or General Office. Both programs are twenty-one months in length. **The Associate in Applied Science degree is awarded to graduates of both programs.**

Secretarial—Executive/Information Management

The purposes of the Secretarial-Executive/Information Management curriculum are to: (1) prepare the individual to enter the secretarial profession, (2) provide an educational program for individuals wanting education for upgrading (moving from one secretarial position to another) or retraining (moving from present position to secretarial position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, shorthand, transcription and business machines. Through these skills the individual will be able to perform office-related activities and through the development of personal competencies and qualities will be provided the opportunity to enter the secretarial profession.

Job Opportunities

Entry Level
Secretary
Stenographer
Data Typist
Typist
Office Clerk
Word Processing Correspondence Specialist
Word Processing Typist
Word Processing Administrative Secretary
Receptionist

Advanced Level
Administrative Secretary
Transcribing Operator Supervisor
Word Processing Supervisor

Secretarial — Executive/Information Management

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
IFM	100	Computer Keyboarding	1	2	2
IFM	101	Basic Typewriting	2	3	3
IFM	115	Word Processing Concepts	3	0	3
BUS	101	Introduction to Business	3	0	3
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
			13	7	16

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
IFM	103	Advanced Typewriting	2	3	3
IFM	108	Phonics for Shorthand	2	0	2
IFM	117	Word Processing	2	3	3
IFM	125	Text Editing Skills	3	0	3
MAT	110	Business Mathematics	5	0	5
			14	6	16
Third Quarter (Spring)					
IFM	105	Expert Typewriting	2	3	3
IFM	112	Shorthand I for Information Processing	3	2	4
BUS	120	Accounting I	3	2	4
ENG	102	Composition	3	0	3
			11	7	14
Fourth Quarter (Summer)					
IFM	113	Shorthand II for Information Processing	3	2	4
IFM	120	Personal Development	3	0	3
IFM	200	Microcomputer Operations	2	2	3
BUS	121	Accounting II	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
			13	8	17
Fifth Quarter (Fall)					
IFM	114	Shorthand III for Information Processing	3	2	4
IFM	201	Information Resource Management	3	0	3
BUS	234	Introduction to Management	3	2	4
ECO	107	Consumer Economics	3	0	3
ENG	204	Oral Communications	3	0	3
			15	4	17
Sixth Quarter (Winter)					
IFM	204	Dictation and Transcription	3	2	4
IFM	208	Secretarial Procedures & Administration I	3	2	4
BUS	114	Business Law I	5	0	5
ENG	205	Written Communications	5	0	5
PSY	206	Applied Psychology	3	0	3
			19	4	21
Seventh Quarter (Spring)					
IFM	209	Secretarial Procedures & Administration II	3	2	4
IFM	220	Office Skills Reinforcement	2	3	3
IFM	230	Administrative Services Management	3	0	3
IFM	250	Computer Office Support Systems	2	2	3
EDP	160	EDP Operations	2	3	3
			12	10	16
		Program Totals	97	46	117

Credits toward the A.A.S. degree in Secretarial—Executive/Information Management may be given to persons holding the Certified Professional Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Office Education. Persons interested in becoming a candidate for the certification can obtain information from the Institute for Certifying Secretaries, 2440 Pershing Road, Suite 6, 10 Crown Center, Kansas City, Missouri 64108.

†Credits toward the A.A.S. degree in Secretarial—Executive/Information Management may be given to persons holding the Professional Legal Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Office Education. Persons interested in becoming a candidate for the certification can obtain information from the National Association of Legal Secretaries (International), Administrative Offices, 3005 East Skelly Drive, Suite 120, Tulsa, Oklahoma 74105.

GENERAL OFFICE

The purposes of the General Office curriculum are to: (1) prepare the individual to enter clerical-office occupations, (2) provide an educational program for individuals wanting education for upgrading (moving from one position to another) or retraining (moving from present position to a clerical position, and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, filing and business machines. Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in office-related activities.

Job Opportunities

Entry Level	**Advanced Level**
Business Machine Operator	Transcribing Machine Operator Supervisor
Data Typist	Duplicating Machine Operator III
Clerk-Typist	Automatic Typewriter Operator
Typist	File Clerk II
Payroll Clerk	Billing Typist
File Clerk I	Accounting Clerk
General Office Clerk	Correspondence Clerk
Posting Clerk	Administrative Clerk
General Clerk	Personnel Clerk
Appointment Clerk	
Receptionist	

General Office

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
IFM	101	Basic Typewriting	2	3	3
ENG	100	Reading Comprehension	1	2	2
*ENG	111	Grammar	5	0	5
MAT	110	General College Mathematics	5	0	5
			13	5	15

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
IFM	103	Advanced Typewriting	2	3	3
IFM	115	Word Processing Concepts	3	0	3
BUS	100	Contemporary Business	3	0	3
BUS	110	Business Machines	1	2	2
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			15	5	17
Third Quarter (Spring)					
IFM	105	Expert Typewriting	2	3	3
OTC	100	Spelling and Punctuation Study	3	0	3
(OTC	115	Data Entry: Concepts and Applications)	(2)	(3)	(3)
*BUS	117	Clerical Accounting I	5	2	6
*ECO	108	Consumer Economics	5	0	5
EDP	104	Introduction to Business Data Processing	2	2	3
			17	7(8)	20
Fourth Quarter (Summer)					
IFM	120	Personal Development	3	0	3
IFM	200	Microcomputer Operations	2	2	3
IFM	205	Professional Typewriting	2	3	3
OTC	115	Data Entry: Concepts and Applications	2	3	3
*BUS	118	Clerical Accounting II	5	2	6
(EDP	104	Introduction to Business Data Processing)	(2)	(2)	(3)
			14	10(9)	18

NOTE: At this point, students will request either **Word Processing or Data Support.** (Selection may be competitive, depending upon the number of requests. Criteria for competition are available for student review.)

WORD PROCESSING

			Hrs. Per Week Class	Lab	Credit Hrs.
Fifth Quarter (Fall)					
IFM	117	Word Processing	2	3	3
OTC	110	Practical Office English	3	0	3
OTC	111	Information Processing Technologies	1	3	2
*OTC	116	Filing	5	0	5
OTC	272	Vocabulary Building	2	0	2
			13	6	15
Sixth Quarter (Winter)					
OTC	213	Office Procedures	3	2	4
OTC	214	Machine Transcription	2	3	3
OTC	216	Payroll Procedures	5	0	5
ENG	204	Oral Communication	3	0	3
ENG	206	Written Communication Skills	3	0	3
			16	5	18

			Hrs. Per Week Class	Lab	Credit Hrs.
Seventh Quarter (Spring)					
††OTC	218	Cooperative Education	0	20	2
††OTC	220	Seminar on Cooperative Education	2	0	2
			2	20	4
		Word Processing Program Totals	90	58	107

DATA SUPPORT

			Hrs. Per Week Class	Lab	Credit Hrs.
Fifth Quarter (Fall)					
OTC	111	Information Processing Technologies	1	3	2
*OTC	116	Filing	5	0	5
OTC	272	Vocabulary Building	2	0	2
EDP	160	EDP Operations	2	3	3
EDP	164	Introduction to Programming	2	2	3
			12	8	15
Sixth Quarter (Winter)					
OTC	213	Office Procedures	3	2	4
OTC	216	Payroll Procedures	5	0	5
OTC	212	Production Data Entry	1	4	3
ENG	204	Oral Communication	3	0	3
ENG	206	Written Communication Skills	3	0	3
			15	6	18
Seventh Quarter (Spring)					
††OTC	218	Cooperative Education	0	20	2
††OTC	220	Seminar on Cooperative Education	2	0	2
			2	20	4
		Data Support Program Totals	88	61	107

*The following substitutions may be made: ECO 108-ECO 105; ENG 111-ENG 101; BUS 117, BUS 118-BUS 120; OTC 116-IFM 201.

IFM courses with similar course titles, and subject content may be substituted for OTC courses with department chairperson's permission.

††Subject to departmental guidelines, appropriate work experience may be used in lieu of OTC 218 and OTC 220.

DIVISION OF ENGINEERING TECHNOLOGY

A.A.S. DEGREE CONFERRED

The following areas of study are included in the school of engineering technology:

Chemical Technology
Civil Engineering Technology
Electronics Engineering Technology
Mechanical Drafting and Design Technology
Mechanical Engineering Technology
Tool Design Technology

The curriculums in the School of Engineering Technology are seven quarters in duration and will require about twenty-five to thirty hours per week in classroom and laboratory work. If a student elects to enroll in the School of Engineering Technology through the evening division, the time required for completion will be extended.

The Division of Engineering Technology will require certain courses of every student. These courses are core courses and will serve as supporting areas of study in addition to the subjects required by the technical specialty.

SPECIFIC ENTRANCE REQUIREMENTS FOR ENGINEERING

1. General college admission requirements.
2. Have high school credit for two units of math, one of which is in algebra and the other in algebra II, plane geometry, or equivalent.
3. It is recommended that the candidate should have completed a unit of science beyond general science, such as physics or chemistry.

CHEMICAL TECHNOLOGY

The Chemical Technology curriculum prepares individuals as research assistants to chemists in the laboratory or as planning and production assistants to chemical engineers in actual industrial production.

Chemical technicians perform quantitative and qualitative chemical analyses of processes involved in research, production or monitoring situations. They test samples of raw materials to determine that they are within specification limits required, analyze samples of finished products to determine quality, and prepare laboratory test reports, check chemical analyses with specifications, and operate electronic laboratory equipment.

Job Opportunities

Chemical Laboratory Technician
Laboratory Assistant
Water Quality Tester
Chemical Operator
Chemical Mixer
Sample Tester
Laboratory Tester
Chemical Strength Tester
Chemical Engineering Technician
Catalytic Converter Operator
Pollution Control Technician

Chemical Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CHM	111	General Chemistry	3	4	5
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	111	Manufacturing Processes	3	3	4
			14	7	17
Second Quarter (Winter)					
CHM	112	General Chemistry	3	4	5
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	101	Properties of Matter	3	2	4
			14	6	17
Third Quarter (Spring)					
CHM	113	General Chemistry	3	4	5
CHM	121	Qualitative Analysis	3	6	5
ENG	103	Report Writing	3	0	3
MAT	103	Analytical Geometry and Calculus I	5	0	5
PHY	102	Mechanics	3	2	4
			17	12	22
Fourth Quarter (Summer)					
CHM	222	Quantitative Chemical Analysis	3	6	5
DFT	106	Technical Graphics	2	4	4
ENG	204	Oral Communications	3	0	3
PHY	103	Electricity	3	2	4
			11	12	16

			Hrs. Per Week Class	Lab	Credit Hrs.
Fifth Quarter (Fall)					
CHM	223	Quantitative Chemical Analysis	2	9	5
CHM	231	Organic Chemistry	3	6	5
ECO	105	Introduction to Economics	5	0	5
SOC	201	Sociology	3	0	3
			13	15	18
Sixth Quarter (Winter)					
CHM	232	Organic Chemistry	3	6	5
CHM	241	Industrial Chemical Analysis	3	9	6
MEC	235	Hydraulics and Pneumatics	3	3	4
			9	18	15
Seventh Quarter (Spring)					
CHM	242	Industrial Chemical Analysis	3	9	6
CHM	244	Environmental Chemistry	3	2	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			11	13	16
		Program Totals	89	83	121

CIVIL ENGINEERING TECHNOLOGY

The Civil Engineering Technology curriculum provides the specialized background and related theory for technicians who work primarily with architects and engineers in the field of construction. The Civil Engineering Technician carries out many of the planning and supervising tasks necessary in the construction of transportation systems such as highways, pipelines, railroads, airfields, and transmission lines; structures for residential and commercial buildings, bridges, dams, and power plants; and water and waste treatment systems. The graduate may perform job tasks in planning, drafting, estimating, supervising, inspecting, or managing construction projects. Other duties might include ordering materials, interpreting plans and specifications, structural detailing and drafting work and making engineering computation of earth work, storm drainage and property surveys.

Upon graduation from this program, the Civil Engineering Technician may qualify for various jobs such as surveying instrumentation and/or party chief, field or laboratory materials tester, construction foreman, field engineering technician or superintendent, expeditor, manager, estimator, construction materials or equipment salesperson, inspector, drafter or structural detailer. Graduates of this program may receive credit toward qualifying to be a land surveyor. They may also continue their education toward a bachelor's degree in engineering technology.

Job Opportunities

Survey Party Chief
Materials Test Technician
Equipment or Materials Salesperson
Civil Drafter or Structural Detailer
Field Engineering Technician
Construction Inspector
Estimator
Construction Foreman

Civil Engineering Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CIV	217	Construction Methods, Equipment and Materials	4	4	6
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
SOC	201	Sociology	3	0	3
			15	4	17

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
CIV	220	Engineerng Construction and Project Planning	4	0	4
DFT	101	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	101	Properties of Matter	3	2	4
			17	6	20
Third Quarter (Spring)					
CIV	101	Surveying I	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
*MAT	103	Analytical Geometry and Calculus I	5	0	5
PHY	102	Mechanics	3	2	4
			12	10	16
Fourth Quarter (Summer)					
CIV	103	Route Surveying	2	6	4
CIV	114	Statics	5	0	5
CIV	218	Properties of Plain Portland Concrete	2	2	3
CHM	102	Engineering Chemistry	2	2	3
DFT	104	Civil Drafting	2	4	4
			13	14	19
Fifth Quarter (Fall)					
CIV	102	Surveying II	2	6	4
CIV	202	Properties of Soils	2	2	3
CIV	216	Strength of Materials	5	0	5
CIV	221	Properties of Asphalt	2	2	3
			11	10	15
Sixth Quarter (Winter)					
CIV	219	Steel and Timber Construction	4	4	6
CIV	224	Reinforced Portland Concrete	2	2	3
CIV	225	Estimates, Codes, and Specifications	4	4	6
CIV	228	Contracts, Engineering Relations and Ethics	2	2	3
			12	12	18
Seventh Quarter (Spring)					
CIV	204	Surveying III	2	6	4
CIV	229	Branches of Civil Engineering Technology	3	3	4
ENG	103	Report Writing	3	0	3
ENG	204	Oral Communication	3	0	3
PSY	206	Applied Psychology	3	0	3
			14	9	17
		Program Totals	94	65	122

*MAT 204 may be substituted for MAT 103

ELECTRONICS ENGINEERING TECHNOLOGY

The Electronics curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as assistants to engineers or as liaisons between engineers and skilled craftspersons.

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. The graduate may begin as an electronics technician, an engineering aide, laboratory technician, supervisor or equipment specialist.

Job Opportunities

Electronics Technician
Electrical Tester
Electronics Engineering Technician
Electronics Mechanic
Electronic Sales and Service Technician

Electronics Engineering Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
ELN	101	Fundamentals of D.C.	4	4	6
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
SOC	201	Sociology	3	0	3
			15	4	17
Second Quarter (Winter)					
ELN	102	Fundamentals of A.C.	4	4	6
CHM	102	Engineering Chemistry	2	2	3
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	101	Properties of Matter	3	2	4
			17	8	21
Third Quarter (Spring)					
ELN	103	A.C. Network Analysis	4	4	6
ENG	204	Oral Communication	3	0	3
MAT	103	Analytical Geometry and Calculus I	5	0	5
MAT	121	Numbering Systems and Boolean Algebra	3	0	3
PHY	102	Mechanics	3	2	4
			18	6	21

			Hrs. Per Week Class	Lab	Credit Hrs.
Fourth Quarter (Summer)					
ELN	106	Introduction to Solid State Devices	4	4	6
ELN	207	Transistor Amplifier Analysis	4	4	6
DFT	109	Electronic Drafting	2	4	4
			10	12	16
Fifth Quarter (Fall)					
ELN	209	Circuit Analysis	4	4	6
ELN	217	Introduction to Special Devices	4	4	6
MAT	201	Calculus II	5	0	5
			13	8	17
Sixth Quarter (Winter)					
ELN	211	Digital Circuits	4	4	6
ELN	213	Waveshaping and Pulse Circuits	4	4	6
EDP	105	Introduction to Scientific Data Processing	2	2	3
PSY	206	Applied Psychology	3	0	3
			13	10	18
Seventh Quarter (Spring)					
ELN	214	Microprocessors	4	4	6
ELN	219	Industrial Instrumentation	4	4	6
ELN	221	Electronic Circuit Design	1	6	3
ENG	103	Report Writing	3	0	3
			12	14	18
		Program Totals	98	62	128

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY

The Mechanical Drafting and Design curriculum prepares mechanical draftsmen. Emphasis is placed upon ability to think and plan, as well as upon drafting procedures and techniques used by mechanical draftsmen.

Mechanical drafting and design technicians perform many aspects of drafting, such as developing the drawing of a section, subassembly or major component. Investigating design factors and availability of materials and equipment, production methods and facilities are frequent assignments. They assist in the design of units and control from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers' original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work or other design, production, tooling, materials and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings. These technicians are employed in many types of manufacturing, fabrication, research development and service industries. Substantial numbers also are employed in communications; transportation; public utilities; consulting engineering firms; and federal, state and local governments.

Job Opportunities

Mechanical Engineering Technician
Mechanical Technician
Tool Design Drafter
Mechanical Drafter
Electromechanisms Design Drafter
Detailer
Casting's Drafter
Patent Drafter
Detail Drafter
Mechanical Equipment Engineering Assistant
Mechanical Design Technician
Die Designer

CADD

This program includes Computer Aided Drafting and Design courses to prepare graduates for employment in industries using computers in Drafting and Design applications.

Mechanical Drafting and Design Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	111	Manufacturing Processes	3	3	4
SOC	201	Sociology	3	0	3
			16	7	19

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
MEC	101	Machine Processes	2	4	4
PHY	101	Properties of Matter	3	2	4
			15	10	20
Third Quarter (Spring)					
DFT	103	Drafting	2	4	4
DFT	204	Descriptive Geometry	2	6	4
*MAT	204	Applied Mathematics	5	0	5
PHY	102	Mechanics	3	2	4
			12	12	17
Fourth Quarter (Summer)					
DFT	201	Design Drafting I	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
MEC	105	Statics	5	0	5
MEC	210	Physical Metallurgy	3	3	4
PSY	206	Applied Psychology	3	0	3
			15	11	19
Fifth Quarter (Fall)					
DFT	205	Design Drafting II	2	6	4
DFT	220	Computer Aided Drafting	2	4	4
MEC	205	Strength of Materials	5	0	5
PHY	103	Electricity	3	2	4
			12	12	17
Sixth Quarter (Winter)					
DFT	211	Mechanisms and Kinematic Design	2	6	4
DFT	212	Jig and Fixture Design	2	6	4
ENG	103	Report Writing	3	0	3
MEC	235	Hydraulics and Pneumatics	3	3	4
			10	15	15
Seventh Quarter (Spring)					
DFT	206	Design Drafting III	2	6	4
DFT	221	Advanced Computer Aided Drafting and Design	2	6	4
ELC	201	Electrical Machinery	3	0	3
ENG	204	Oral Communication	3	0	3
			10	12	14
		Program Totals	90	79	121

*MAT 103 may be substituted for MAT 204.

MECHANICAL ENGINEERING TECHNOLOGY

The Mechanical Engineering Technology curriculum prepares technicians to assist engineers in the design and development of machinery and other mechanical equipment and parts and to perform other activities which require technical knowledge of factors such as tolerances, stresses, strains, friction and vibration. The scope of subject matter covered prepares the graduate for employment in greatly diversified branches of the mechanical field.

The graduate may wish to work with testing experimental machinery and equipment and analyzing the results. Typical of such devices are internal combustion engines, steam turbines, jet and rocket engines, nuclear reactors, refrigeration and air conditioning equipment, missiles, spacecraft, marine equipment, motor vehicles, railroad equipment and machines for specialized industries such as textile mills. Another specialty area graduates may wish to pursue is that of the tool designer. Tool designers design tools and devices for the mass production of manufactured articles. They may also work with the instrumentation and design of machine tools or in equipping plants or mills which require special construction to accommodate power-producing or transmitting machinery.

Job Opportunities

Mechanical Engineering Technician
Mechanical Technician
Tool Design Drafter
Mechanical Equipment Engineering Assistant
Metallurgical Technician
Metallurgical Laboratory Assistant
Tester
Numerical Control Tool Programmer
Heat Transfer Technician
Tool Designer
Mechanical Design Technician
Die Designer
Test Technician

Mechanical Engineering Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
MEC	111	Manufacturing Processes	3	3	4
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
SOC	201	Sociology	3	0	3
			16	7	19

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
MEC	210	Physical Metallurgy	3	3	4
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	101	Properties of Matter	3	2	4
			16	9	20
Third Quarter (Spring)					
MEC	212	Practical Automation	4	4	6
DFT	204	Descriptive Geometry	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
PHY	102	Mechanics	3	2	4
			11	14	17
Fourth Quarter (Summer)					
MEC	105	Statics	5	0	5
ENG	204	Oral Communications	3	0	3
MAT	103	Analytical Geometry and Calculus I	5	0	5
PHY	103	Electricity	3	2	4
			16	2	17
Fifth Quarter (Fall)					
MEC	101	Machine Processes	2	4	4
MEC	205	Stength of Materials	5	0	5
BUS	101	Introduction to Business	3	0	3
DFT	220	Computer Aided Drafting	2	4	4
ENG	103	Report Writing	3	0	3
			16	8	19
Sixth Quarter (Winter)					
MEC	206	Dynamics	3	0	3
MEC	208	Machine Design I	4	0	4
MEC	220	Power Systems	3	2	4
ELC	201	Electrical Machinery	3	0	3
			13	2	14
Seventh Quarter (Spring)					
MEC	209	Machine Design II	4	0	4
CHM	102	Engineering Chemistry	2	2	3
ISC	102	Industrial Safety	3	0	3
MEC	235	Hydraulics and Pneumatics	3	3	4
PSY	206	Applied Psychology	3	0	3
			14	5	17
		Program Totals	102	47	123

TOOL DESIGN TECHNOLOGY**

The Tool Design Technology program provides the student knowledge and skills to design and detail specific types of tools to produce products for the manufacturing industry. The curriculum includes the basic skills for designing a variety of tools including jigs and fixtures, gauges, metal stamping dies, cutting tools, plastic and metal casting molds, and special machines. The program offers drafting skills used in most engineering functions, a planned sequence of related courses and shop experiences, instruction in hydraulics, pneumatics, electrical control systems, and machining processes. The student also studies cost analysis and the evaluation of economic benefits of alternative designs.

An emphasis on thinking, planning, and advanced courses such as computer aided drafting and design should prepare the graduate for the most modern tool design environments. The content of the program will help the graduate to enter the field of Tool Design and advance to future jobs in the manufacturing engineering market.

Job Opportunities

Tool Detailer
Tool Drafter
Tool Design Technician
Tool Engineering Technician
Manufacturing/Production Engineering Technician

**Tool Design Technology will start as an evening program Fall 1986-1987 and as a day program Fall 1987-1988.

Tool Design Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	111	Manufacturing Processes	3	3	4
SOC	201	Sociology	3	0	3
			16	7	19
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
MEC	101	Machine Processes	2	4	4
PHY	101	Properties of Matter	3	2	4
			15	10	20

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
TDT	101	Geometric Tolerances and Inspection Procedures	1	2	2
DFT	103	Drafting	2	4	4
DFT	204	Descriptive Geometry	2	6	4
*MAT	204	Applied Mathematics	5	0	5
PHY	102	Mechanics	3	2	4
			13	14	19
Fourth Quarter (Summer)					
TDT	105	Manufacturing Cost Analysis	2	0	2
TDT	201	Tool Design I	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
MEC	105	Statics	5	0	5
MEC	210	Physical Metallurgy	3	3	4
			14	11	18
Fifth Quarter (Fall)					
TDT	202	Tool Design II	2	6	4
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
PHY	103	Electricity	3	2	4
			13	11	17
Sixth Quarter (Winter)					
TDT	203	Tool Design III	2	6	4
DFT	220	Computer Aided Drafting	3	3	4
ENG	103	Technical Report Writing	3	0	3
MEC	206	Dynamics	3	0	3
MEC	213	Machine Design	2	2	3
			13	11	17
Seventh Quarter (Spring)					
TDT	204	Tool Design IV	2	6	4
TDT	210	Introduction to CNC and Robotic Applications	3	3	4
DFT	221	Advanced Computer Aided Drafting and Design	2	6	4
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			13	15	18
		Program Totals	97	79	128

*MAT 103 may be substituted for MAT 204.

DIVISION OF GENERAL EDUCATION

A.A.S. DEGREE CONFERRED

The Division of General Education is supportive of all curriculum programs and offers the following area of study in both day and evening programs.

LAW ENFORCEMENT TECHNOLOGY

The Law Enforcement Technology curriculum prepares individuals for a career in the law enforcement services occupations field and other allied occupations. Law Enforcement occupations require a thorough understanding of criminal behavior, criminal investigation, interpersonal communications, law, patrol operations, psychology, sociology, traffic management and other aspects of law enforcement administration and operations.

Job opportunities are available with federal, state, county and municipal governments. In addition, knowledge, skills, and abilities acquired in this course of study qualify one for job opportunities with private enterprise in such areas as industrial, retail and private security.

The North Carolina Training and Standards Commission requires that every law enforcement officer complete an approved basic training program.

Job Opportunities

Alcohol Enforcement Officer
College or University Officer
Correctional Officer
Correctional Programs Assistant
Deputy Sheriff
Industrial Security Officer
Investigators
Highway Patrolman
Police Officer
Park Security Officer
Private Security Officer
Retail Security Officer
Wildlife Enforcement Officer

SPECIFIC ENTRANCE REQUIREMENTS

1. General college admission requirements.
2. Three character references are required. One of the references must be from a local law enforcement agency.
3. Individuals seeking careers as law enforcement officers must meet the Minimum Standards for Employment criteria outlined in the North Carolina Code Book-General Statute 17-A. These may be reviewed in law enforcement agencies or the Student Services office at the College. These requirements are independent of the College and its program.

Law Enforcement Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CJC	101	Introduction to Criminal Justice	5	0	5
ENG	100	Reading Comprehension	1	2	2
POL	103	State and Local Government	4	0	4
PSY	101	Introduction to Psychology	3	0	3
ELECTIVE					
			13	2	14
Second Quarter (Winter)					
CJC	102	Introduction to Criminology	5	0	5
EMS	100	Introduction to Emergency Medical Services	2	2	3
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
ELECTIVE					
			15	2	16
Third Quarter (Spring)					
CJC	115	Criminal Law I	3	0	3
CJC	205	Criminal Evidence	4	0	4
ENG	102	Composition	3	0	3
PSY	203	Abnormal Psychology	3	0	3
ELECTIVE					
			13	0	13
Fourth Quarter (Summer)					
CJC	201	Motor Vehicle Law	3	0	3
CJC	210	Criminal Investigation I	4	0	4
CJC	216	Criminal Law II	3	0	3
ENG	204	Oral Communications	3	0	3
PHO	201	Introduction to Photography	1	2	2
ELECTIVE					
			14	2	15
Fifth Quarter (Fall)					
CJC	110	Introduction to Juvenile Justice	5	0	5
CJC	211	Introduction to Criminalistics	4	2	5
CJC	213	Criminal Investigation II	4	0	4
PSY	151	Applied Psychology for Law Enforcement	3	0	3
ELECTIVE					
			16	2	17

			Hrs. Per Week Class	Lab	Credit Hrs.
Sixth Quarter (Winter)					
CJC	125	Judicial Process	4	0	4
CJC	200	Crime Prevention	3	0	3
CJC	202	Traffic Planning and Management	3	2	4
ENG	103	Report Writing	3	0	3
SOC	201	Sociology	3	0	3
ELECTIVE					
			16	2	17
Seventh Quarter (Spring)					
CJC	206	Community Relations	3	0	3
CJC	212	Narcotics, Drugs and Human Behavior	3	2	4
CJC	217	Patrol Procedures	3	0	3
CJC	220	Police Organization, Administration and Supervision	5	0	5
			14	2	15
		Program Totals	101	12	107*

*Plus 12 credit hours of electives, making total credit hours 119.

Related Electives

In addition to required courses, students must complete a minimum of twelve (12) credit hours of approved electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has departmental approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Selected electives may be scheduled from the courses indicated below. Students may also select a maximum of two (2) credit hours of Physical Education.

BIO	101	Human Anatomy and Physiology I
BIO	102	Human Anatomy and Physiology II
BIO	111	Basic Life Sciences
BUS	100	Contemporary Business
BUS	101	Introduction to Business
BUS	110	Business Machines
BUS	114	Business Law
BUS	120	Accounting I
BUS	121	Accounting II
BUS	125	Bank Fundamentals
BUS	233	Personnel Management and Supervision
BUS	234	Introduction to Management
CHM	100	Introduction to Chemistry
CHM	101	Fundamentals of Physiological Chemistry
CHM	111	General Chemistry
CJC	105	Introduction to Correction

CJC	106	Probation and Parole
CJC	107	Police Liability
CJC	111	Defense Tactics
CJC	112	Legal Research
*CJC	116-118	CJC Internship (1 Cr. Hr. Each)
CJC	250-252	Topics in Criminal Justice - Law Enforcement
ECO	102	Economics I
ECO	104	Economics II
ECO	107	Consumer Economics
ECO	108	Consumer Economics
EDP	104	Introduction to Business Data Processing
EDP	105	Introduction to Scientific Data Processing
MAT	101	Algebra and Trigonometry I
MAT	105	Introduction to Algebra
MAT	110	Business Mathematics
MAT	214	Statistics
PSY	206	Applied Psychology
SSC	101	Basic Typewriting

*Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of three (3) credit hours may be earned through internships. Prerequisite: Permission of the department chairperson.

DIVISION OF ALLIED HEALTH EDUCATION

The Allied Health Program provides an opportunity for extensive and intensive study in several areas of health. It will enable the student to engage in a health career of his/her choice and acquire sufficient knowledge of health to enjoy a healthful and satisfying life and also develop an understanding of helping others in work and everyday living. Students desiring training in health occupations need to have a background in science, chemistry, biology, social sciences, and varying degrees of mathematics, and possess the emotional stability required by the profession.

North Carolina resident applications for the Medical and Dental Programs must be submitted before the end of January each year. Non-residents of North Carolina will be considered only in the event vacancies exist after the month of January.

In the event that any curriculum has more qualified applicants than can be served, selection criteria will be imposed. Applicants will be provided specific information regarding criteria.

Applicants to the various Allied Health programs should be aware that felony convictions and past offenses with drugs and crimes involving moral turpitude may prevent the prospective student from obtaining licensure or participating in clinical activities. College admissions personnel should be informed of any prior problems in these areas so that appropriate steps can be taken to assure that the applicant can successfully complete the program and obtain the necessary licensure or certification.

A.A.S. DEGREE CONFERRED

Associate Degree Nursing
Dental Hygiene
Emergency Medical Science
Medical Laboratory Technology
Radiologic Technology

DIPLOMA AWARDED

Dental Assisting
Practical Nurse Education

ASSOCIATION DEGREE NURSING

The Associate Degree Nursing curriculum is designed to prepare graduates to integrate the principles and theories of nursing and the sciences in utilizing the nursing process in the practice of nursing. The practice of nursing by associate degree nursing graduates consists of: (1) assessing the patient's physical and mental health, including the patient's reaction to illness and treatment regimens; (2) recording and reporting the results of the nursing assessment; (3) planning, initiating, delivering, and evaluating appropriate nursing acts; (4) teaching, del-

egating and supervising other personnel in implementing the treatment regimen; (5) collaborating with other health care providers in determining the appropriate health care for a patient; (6) implementing the treatment and pharmaceutical regimen prescribed by any person authorized by State law to prescribe such a regimen; (7) providing teaching and counseling about the patient's health care; (8) reporting and recording the plan for care, nursing care given, and the patient's response to that care; and (9) supervising, teaching, and evaluating those who perform or are preparing to perform nursing functions.

Graduates are eligible to take the National Council Licensure Examination (NCLEX-RN) which is required for practice as a registered nurse.

Individuals desiring a career in registered nursing should take biology, algebra and chemistry courses prior to entering the program.

Job Opportunities

Registered Nurse

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit for four units of English, two units of mathematics one of which must be algebra, chemistry, and biology.
3. Three personal references.
4. Acceptable reports of medical and dental examinations.
5. 18 to 45 years of age (individual exceptions made by faculty).
6. The North Carolina Board of Nursing may deny license to individuals "convicted of a felony or any other crime involving moral turpitude."

Associate Degree Nursing

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
NUR	101	Fundamentals of Nursing I	5	4	0	7
BIO	101	Anatomy and Physiology I	4	3	0	5
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
NUT	101	Nutrition	3	0	0	3
			15	9	0	19
Second Quarter (Winter)						
NUR	103	Fundamentals of Nursing II	5	0	9	8
BIO	102	Anatomy and Physiology II	4	3	0	5
ENG	101	Fundamentals of English	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
			15	3	9	19
Third Quarter (Spring)						
NUR	105	Fundamentals of Nursing III	5	0	9	8
BIO	103	Microbiology	4	3	0	5
PSY	203	Abnormal Psychology	3	0	0	3
PSY	105	Human Development	3	0	0	3
			15	3	9	19

			Hrs. Per Week Class	Lab	Clinic	Credit Hrs.
Fourth Quarter (Summer)						
*NUR	206	Psychiatric Nursing	4	0	6	6
*NUR	207	Maternity Nursing	4	0	6	6
ENG	102	Composition	3	0	0	3
SOC	201	Sociology	3	0	0	3
			14	0	12	18
Fifth Quarter (Fall)						
NUR	210	Medical Surgical Nursing I	7	0	15	12
ENG	103	Report Writing	3	0	0	3
			10	0	15	15
Sixth Quarter (Winter)						
NUR	211	Nursing Seminar I	3	0	0	3
NUR	212	Medical Surgical Nursing II	7	0	15	12
ENG	204	Oral Communications	3	0	0	3
			13	0	15	18
Seventh Quarter (Spring)						
NUR	213	Nursing Seminar II	2	0	0	2
NUR	214	Medical Surgical Nursing III	7	0	18	13
			9	0	18	15
		Program Totals	91	15	78	123

*Mini-Courses

PRACTICAL NURSE EDUCATION

The Practical Nursing curriculum graduates are prepared to take the National Council Licensure Examination required to practice as a licensed practical nurse. The Practical Nurse Education curriculum is designed to develop competencies in practicing the following five components of practice as defined by the North Carolina **Nursing Practice Act, 1981:** (1) Participating in assessing the client's physical and mental health including the client's reaction to illnesses and treatment regimens; (2) Recording and reporting the results of the nursing assessment; (3) Participating in implementing the health care plan developed by the registered nurse and/or prescribed by any person authorized by State law to prescribe such a plan, by performing tasks delegated by and performed under the supervision or under orders or directions of a registered nurse, physician licensed to practice medicine, dentist, or other person authorized by State Law to provide such supervision; (4) Reinforcing the teaching and counseling of a registered nurse, physician licensed to practice medicine in North Carolina, or dentist; and (5) Reporting and recording the nursing care rendered and the client's response to that care.

Licensed practical nurses may be employed in hospitals, nursing homes, clinics, doctors' offices, industry, and public health agencies.

Individuals desiring a career in practical nursing should be encouraged to take math and science courses in high school.

Job Opportunities

Licensed Practical Nurse

Specific Entrance Requirements

1. General college admission requirements.
2. Three personal references.
3. Reports of medical and dental examinations.
4. The North Carolina State Board of Nursing may deny licensure to individuals "convicted of a felony or any crime involving moral turpitude."

Practical Nurse Education

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
PNE	1112	Fundamentals of Nursing	6	2	2	8
PNE	1113	Pharmacology	2	0	0	2
BIO	111	Basic Life Sciences	5	0	0	5
ENG	101	Fundamentals of English	3	0	0	3
NUT	101	Nutrition	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
(PSY	201	Introduction to Psychology)	(3)	(0)	(0)	(3)
			22	2	2	24
Second Quarter (Winter)						
PNE	1120	Clinical I Medical Surgical	0	0	15	5
PNE	1122	Medical Surgical Nursing I	8	0	0	8
PNE	1123	Maternal and Infant Care	4	0	0	4
PSY	105	Human Growth and Development	3	0	0	3
			15	0	15	20
Third Quarter (Spring)						
PNE	1130	Clinical II Maternal Newborn and Medical Surgical Nursing	0	0	18	6
PNE	1132	Medical Surgical Nursing II	10	0	0	10
PNE	1134	Pediatric Nursing	2	0	0	2
			12	0	18	18
Fourth Quarter (Summer)						
PNE	1140	Clinical III Pediatrics and Medical Surgical Nursing	0	0	18	6
PNE	1142	Medical Surgical Nursing III	10	0	0	10
PNE	1144	Nursing Seminar	2	0	0	2
			12	0	18	18
		Program Totals	61	2	53	80

DENTAL HYGIENE

The Dental Hygiene curriculum prepares graduates to take patient histories, teach oral hygiene, clean teeth, take X-rays and apply preventive agents under the supervision of a dentist. Dental hygientists may be employed in dentists' offices, clinics, schools, public health agencies, industry, and educational institutions.

Graduates are eligible to take the Dental Hygiene National Board written examination, which is administered by the American Dental Association, Joint Commission on National Dental Examinations; and the State Board Clinical Examination, which is administered by the North Carolina Board of Dental Examiners. A passing grade on both examinations is required for practice as a Registered Dental Hygienist in North Carolina.

Individuals desiring a career in Dental Hygiene should take biology, algebra, and chemistry courses prior to entering the program.

Job Opportunities

Dental Hygienist

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit for four units of English, two units of Algebra (one unit may be plane geometry), one unit of chemistry and one unit of biology. Science oriented college preparatory courses are recommended.
3. Acceptable reports of medical and dental examinations.

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
DHY	101	Dental Anatomy	2	4	0	4
DHY	108	Dental Radiology I	3	2	0	4
DHY	110	Preclinical Dental Hygiene I	2	6	0	5
BIO	101	Human Anatomy and Physiology I	4	3	0	5
			11	15	0	18
Second Quarter (Winter)						
DHY	102	Head and Neck Anatomy	2	0	0	2
DHY	105	Dental Radiology II	1	3	0	2
DHY	106	Oral Embryology and Histology	2	0	0	2
DHY	111	Preclinical Dental Hygiene II	3	6	0	6
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
			15	14	0	21

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Third Quarter (Spring)						
DHY	114	General and Oral Pathology I	2	0	0	2
DHY	116	Dental Hygiene Seminar I	3	2	0	4
DHY	117	Dental Hygiene Clinic I	0	0	9	3
DHY	206	Dental Materials	3	4	0	5
BIO	103	Microbiology	4	3	0	5
			12	9	9	19
Fourth Quarter (Summer)						
DHY	115	General & Oral Pathology II	2	0	0	2
DHY	118	Dental Hygiene Seminar II	2	2	0	3
DHY	119	Dental Hygiene Clinic II	0	0	9	3
NUT	202	Nutrition	3	0	0	3
ENG	101	Fundamentals of English	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
			13	2	9	17
Fifth Quarter (Fall)						
DHY	205	Periodontology	3	0	0	3
DHY	216	Dental Hygiene Seminar III	3	3	0	4
DHY	217	Dental Hygiene Clinic III	0	0	12	4
DHY	221	Pharmacology	3	0	0	3
ENG	102	Composition	3	0	0	3
SOC	201	Sociology	3	0	0	3
			15	3	12	20
Sixth Quarter (Winter)						
DHY	203	Community Dental Health I	3	2	0	4
DHY	218	Dental Hygiene Seminar IV	3	3	0	4
DHY	219	Dental Hygiene Clinic IV	0	0	12	4
ENG	204	Oral Communication	3	0	0	3
			9	5	12	15
Seventh Quarter (Spring)						
DHY	222	Community Dental Health II	1	4	0	3
DHY	223	Dental Hygiene Seminar V	3	3	0	4
DHY	224	Dental Hygiene Clinic V	0	0	12	4
ENG	103	Report Writing	3	0	0	3
			7	7	12	14
		Program Totals	82	55	54	124

DENTAL ASSISTING

The Dental Assisting curriculum prepares graduates to assist the dentist in providing treatment services. Functions performed by the dental assistant include dental health teaching, preparing dental materials to be used, preparing the patient, taking dental X-rays, caring for dental supplies and equipment, passing instruments and materials to the dentist, making appointments, maintaining patient records and other office management procedures. Graduates may practice in dental settings such as dentists' offices, dental clinics, public health clinics, federal service clinics, dental schools, and state health departments.

This curriculum prepares the graduate for certification as a Certified Dental Assistant by the Certifying Board of the Dental Assisting National Board, Incorporated.

Individuals desiring a career in dental assisting should, if possible, take biology, mathematics and typing courses prior to entering the program.

Job Opportunities

Dental Assistant

Specific Entrance Requirements

1. The general admission requirements and procedures for enrollment into a curriculum program at A-B Tech.
2. Reports of medical and dental examinations.

Dental Assisting

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
DEN	1103	Dental Materials I	2	2	0	3
DEN	1104	Oral Anatomy & Histology	2	2	0	3
DEN	1120	Clinical Science I	3	4	0	5
DEN	1121	Dental Radiology	3	4	0	5
BIO	1109	Biomedical Sciences	4	2	0	5
			14	14	0	21
Second Quarter (Winter)						
DEN	1106	Head & Neck Anatomy	2	0	0	2
DEN	1122	Dental Materials II	2	2	0	3
DEN	1123	Oral Health Education	2	4	0	4
DEN	1130	Clinical Science II	3	3	3	5
ENG	101	Fundamentals of English	3	0	0	3
			12	9	3	17

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Third Quarter (Spring)						
DEN	1105	Dental Science	4	0	0	4
DEN	1125	Dental Affiliation I	1	0	12	5
DEN	1131	Dental Office Management	3	2	0	4
DEN	1133	Dental Office Emergencies	2	2	0	3
			10	4	12	16
Fourth Quarter (Summer)						
DEN	1135	Dental Affiliation II	1	0	18	7
DEN	1141	Professional Development	3	0	0	3
ENG	204	Oral Communications	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			10	0	18	16
		Program Totals	46	27	33	70

EMERGENCY MEDICAL SCIENCE

The Emergency Medical Science Curriculum is designed to prepare graduates, while under the direct supervision of a physician or MICN, to perform patient assessments and render emergency care in the pre-hospital and hospital setting. Students will learn the basic and advanced life support skills necessary by the combination of classroom teaching with practice in laboratory sessions and clinical experiences with emergency medical services and community hospitals.

As students progress through the curriculum, they become eligible to take certifying examinations for EMT, EMT-I, and EMT-P given by the North Carolina Office of Emergency Medical Services and/or the National Registry of Emergency Medical Technicians.

Graduates may be employed in emergency rooms of hospitals, ambulance or rescue squad services, industry, medical supply companies, educational institutions, and governmental agencies.

Individuals desiring a career in emergency medical science should take biology, mathematics and, if possible, chemistry prior to entering the program.

Job Opportunities

Ambulance Attendant
Emergency Medical Technician
Emergency Medical Technician—Intermediate
Emergency Medical Technician—Paramedic
E.M.S. Manager/Director
E.M.S. Training Officer/Instructor

Specific Entrance Requirements

1. General college admission requirements
2. Must be 18 years of age at the end of the second quarter of the program.
3. Current N.C. drivers' license.
4. Acceptable reports of medical and dental examinations.
5. Character/employment references (three).
6. The North Carolina Office of Emergency Medical Services requires that a physician certify the "candidate to be physically fit and free from physical defects, handicaps, or diseases" which might impair ability to drive, attend an ambulance, and/or perform any duties prescribed by OEMS.
7. The North Carolina Office of Emergency Medical Services may deny certification to individuals convicted of a felony or any other crime involving moral turpitude.

Emergency Medical Science

			Hrs. Per Week Class	Lab	Clinic	Credit Hrs.
First Quarter (Fall)						
EMS	101	Fundamentals of EMS	8	0	6	10
BIO	101	Human Anatomy & Physiology I	4	3	0	5
PSY	101	Introduction to Psychology	3	0	0	3
			15	3	6	18

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Second Quarter (Winter)						
†EMS	104	Injury Management I	4	2	0	5
†EMS	105	Clinical Seminar & Practicum I	2	0	9	5
EMS	112	Emergency Vehicle Operation, Communications, and Record Keeping	4	3	0	5
BIO	102	Human Anatomy & Physiology II	4	3	0	5
			14	8	9	20
Third Quarter (Spring)						
EMS	103	Principles of Extrication & Rescue	4	3	0	5
EMS	106	Introduction to Pharmacology	2	2	0	3
EMS	108	Clinical Seminar & Practicum II	2	0	9	5
ENG	101	Fundamentals of English	3	0	0	3
PSY	203	Abnormal Psychology	3	0	0	3
			14	5	9	19
Fourth Quarter (Summer)						
EMS	110	Pharmacology for EMS	2	2	0	3
EMS	111	Clinical Seminar & Practicum III	2	0	9	5
EMS	201	Advanced Life Support I	4	2	0	5
ENG	102	Composition	3	0	0	3
			11	4	9	16
Fifth Quarter (Fall)						
EMS	202	Clinical Seminar & Practicum IV	2	0	9	5
EMS	203	Emergency Psychiatric Care	3	0	0	3
EMS	205	Advanced Life Support II	4	2	0	5
AHE	213	Hazardous Materials & Disaster	2	2	0	3
			11	4	9	16
Sixth Quarter (Winter)						
EMS	206	Clinical Seminar & Practicum V	2	0	9	5
EMS	207	OB, Newborn, and Pediatric Emergencies	4	0	0	4
ENG	204	Oral Communications	3	0	0	3
SOC	201	Sociology	3	0	0	3
		Elective (Minimum 3 Credit Hours)	3	0	0	3
			15	0	9	18
Seventh Quarter (Spring)						
EMS	211	Clinical Symposium	2	3	6	5
AHE	215	EMS Personnel Management	5	0	0	5
AHE	216	Fundamentals of Public Safety	3	2	0	4
ENG	103	Report Writing	3	0	0	3
			13	5	6	17
		Program Totals	93	29	57	124

All courses are required for the A.A.S. degree.
‡Courses required for EMT—Certification.
†Courses required for EMT—Intermediate Certification.

MEDICAL LABORATORY TECHNOLOGY

The Medical Laboratory Technology curriculum prepares graduates to perform clinical laboratory procedures in chemistry, hematology, bacteriology, parasitology, serology, blood banking and body fluid analysis, in order to develop data that may be used in the diagnosis of diseases and in evaluating the effectiveness of treatments.

The medical laboratory technician works under the supervision of a medical technologist and may be employed as a staff technician or assistant supervisor in a medical laboratory, or clinical instructor in an educational institution.

The graduate is eligible to take the registry examination given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists for certification as a medical laboratory technician or the examination given by the National Certifying Agency as a clinical laboratory technician.

Individuals desiring a career in medical laboratory technology should, if possible, take algebra, biology and chemistry courses prior to entering the program.

Job Opportunities

Medical Laboratory Technician

CLINICAL EXPERIENCE

Clinical experiences are conducted in the Clinical Laboratory at Memorial Mission Hospital. Because of clinical space requirements the students will have individual schedules for MLT clinical experiences. During the first year of the curriculum, Clinical Experience classes will begin at 6:15 a.m. The Program has accreditation for a maximum of 12 second year students in clinical experience at Memorial Mission Hospital. In the event there are more than 12 students who successfully complete first year courses, only the top 12 will be allowed to continue during the next school year.

The following will be utilized in selecting students for second year courses.

1. Cumulative grade point average.
2. Grades of C or better in MLT Courses.
3. Progression Committee Review rating characteristics including attitude, adaptability, attendance, etc.

Specific Entrance Requirements

1. General college admission requirements.
2. High School Units
   a. Chemistry and algebra required.
   b. Biology strongly recommended.
3. Character references (three).
4. Reports of medical and dental examinations.

Medical Laboratory Technology

			Hrs. Per Week Class	Lab	Clinic	Credit Hrs.
First Quarter (Fall)						
MLT	101	Clinical Experience I	4	0	6	6
BIO	101	Human Anatomy and Physiology I	4	3	0	5
ENG	101	Fundamentals of English	3	0	0	3
MAT	106	Introduction to Mathematics	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
			17	3	6	20
Second Quarter (Winter)						
MLT	105	Hematology I	3	0	0	3
MLT	108	Clinical Experience II	2	0	6	4
MLT	115	Microbiology I	1	2	0	2
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	103	MLT Chemistry I	3	2	0	4
			13	7	6	18
Third Quarter (Spring)						
MLT	107	Clinical Chemistry I	3	0	0	3
MLT	113	Clinical Experience III	0	0	9	3
MLT	114	Immunohematology I	3	2	0	4
MLT	116	Microbiology II	1	2	0	2
CHM	104	MLT Chemistry II	3	2	0	4
			10	6	9	16
Fourth Quarter (Summer)						
MLT	106	Urinalysis	1	2	0	2
MLT	201	Microbiology III	3	0	0	3
MLT	118	Immunohematology II	1	2	0	2
MLT	119	Clinical Experience IV	0	0	6	2
MLT	121	Hematology II	1	4	0	3
ENG	204	Oral Communications	3	0	0	3
			9	8	6	15
Fifth Quarter (Fall)						
MLT	112	Clinical Chemistry II	1	2	0	2
MLT	202	Clinical Experience V	0	0	27	9
ENG	102	Composition	3	0	0	3
			4	2	27	14
Sixth Quarter (Winter)						
MLT	206	Clinical Experience VI	0	0	27	9
MLT	220	Parasitology	1	2	0	2
ENG	103	Report Writing	3	0	0	3
			4	2	27	14

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Seventh Quarter (Spring)						
MLT	205	Hematology III	1	2	0	2
MLT	209	Clinical Experience VII	0	0	27	9
EDP	106	Introduction to Medical Data Processing	2	2	0	3
			3	4	27	14
Eighth Quarter (Summer)						
MLT	211	Instrumentation	0	2	0	1
MLT	212	Clinical Experience VIII	0	0	27	9
SOC	201	Sociology	3	0	0	3
			3	2	27	13
		Program Totals	63	34	135	124

RADIOLOGIC TECHNOLOGY (RADIOGRAPHY)

The Radiologic Technology curriculum prepares graduates to be competent Medical Radiographers. The radiographer is a skilled person qualified by technological education to provide patient services using imaging modalities (as directed by physicians qualified to order and/or perform radiologic procedures) by: (1) Applying knowledge of the principles of radiation protection for the patient, self and others; (2) Applying knowledge of anatomy, positioning and radiographic techniques to accurately demonstrate anatomical structures on a radiograph; (3) Determining exposure factors to achieve optimum radiographic technique with a minimum of radiation exposure to the patient; (4) Examining radiographs for the purpose of evaluating technique, positioning and other pertinent technical qualities; (5) Exercising discretion and judgement in the performance of medical imaging procedures; (6) Providing patient care essential to radiologic procedures; (7) Recognizing emergency patient conditions and initiating life saving first aid.

Graduates may be employed in Radiology departments in hospitals, clinics, physicians' offices, research and medical laboratories, federal and state agencies and industry.

Graduates are eligible to take the national examination given by the American Registry of Radiologic Technologists for certification and registration as medical radiographers.

Individuals desiring a career in radiologic technology should take courses in biology, algebra and chemistry and/or physics prior to entering the program.

Job Opportunities

Radiologic Technologist
Radiographer

CLINICAL EXPERIENCE

Exposure of a pregnant female to radiation must be avoided because of the possible harmful effects to the developing fetus. Since the practical work of student technologists involves some exposure to radiation, it is felt that this portion of training should be discontinued for any female student known to be pregnant. In some instances, it may be possible for the student to continue to attend classes and complete practical work at a later date.

Student enrolled in the Radiologic Technology Program will receive clinical training at the major hospitals in the area. Because of the limited space in the existing clinical facilities, students will be divided into two groups: one-half will receive their clinical experience in the morning and the other half during the afternoon. This will be done on a rotational basis.

During the two year period of training, student technologists will be expected to work on the weekends on a rotational basis. WEEKEND WORK WILL NOT NECESSARILY FOLLOW THE CALENDAR IN THE SCHOOL CATALOG.

Specific Entrance Requirements

1. General college admission requirements.
2. Biology, algebra, physics strongly recommended.
3. Three letters of recommendation.

Radiologic Technology

			Hrs. Per Week Class	Lab	Clinic	Credit Hrs.
First Quarter (Fall)						
RAD	100	Introduction to Radiology	3	0	0	3
RAD	102	Radiographic Technique I	4	0	0	4
RAD	106	Clinical Technique I	0	0	12	4
RAD	135	Radiological Anatomy I	2	0	0	2
NUR	125	Nursing Procedures	2	0	0	2
			11	0	12	15
Second Quarter (Winter)						
RAD	111	Positioning I	2	2	0	3
RAD	112	Radiographic Technique II	3	0	0	3
RAD	114	Clinical Technique II	1	0	21	8
RAD	136	Radiological Anatomy II	3	0	0	3
BIO	107	Anatomy and Physiology I	4	0	0	4
			13	2	21	21
Third Quarter (Spring)						
RAD	121	Positioning II	2	2	0	3
RAD	124	Clinical Technique III	1	0	21	8
BIO	108	Anatomy and Physiology II	4	0	0	4
PHY	105	Physics	4	0	0	4
			11	2	21	19
Fourth Quarter (Summer)						
RAD	131	Positioning III	2	2	0	3
RAD	134	Clinical Technique IV	1	0	21	8
RAD	205	Medical Use of Radioisotopes	2	0	0	2
ENG	101	Fundamentals of English	3	0	0	3
			8	2	21	16
Fifth Quarter (Fall)						
RAD	201	Positioning IV	2	2	0	3
RAD	203	Clinical Technique V	1	0	21	8
RAD	225	Principles of Radiation Protection and Radiobiology	2	0	0	2
PSY	101	Introduction to Psychology	3	0	0	3
SOC	201	Sociology	3	0	0	3
			11	2	21	19

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Sixth Quarter (Winter)						
RAD	210	Positioning V	2	2	0	3
RAD	212	Clinical Technique VI	1	0	21	8
RAD	214	Equipment and Maintenance	2	0	0	2
RAD	215	A survey of Medical and Surgical Diseases	2	0	0	2
ENG	102	Composition	3	0	0	3
			10	2	21	18
Seventh Quarter (Spring)						
RAD	221	Positioning VI—Opaque Media	2	2	0	3
RAD	223	Clinical Technique VII	1	0	21	8
EDP	106	Intro. to Medical Data Processing	2	2	0	3
ENG	103	Report Writing	3	0	0	3
			8	4	21	17
Eighth Quarter (Summer)						
RAD	213	Advanced Radiographic Technique	3	0	0	3
RAD	231	Positioning VII—Comprehensive Review	2	2	0	3
RAD	233	Clinical Technique VIII	1	0	21	8
ENG	204	Oral Communication	3	0	0	3
			9	2	21	17
		Program Totals	81	16	159	142

DIVISION OF HOSPITALITY EDUCATION

An A.A.S. Degree is conferred in the following study areas of the Division of Hospitality Education:

Culinary Technology
Hospitality Management and Administration

The areas of study in the Division of Hospitality Education are seven quarters in duration and will require from twenty to thirty hours per week of course work.

In addition to regular classroom work each student will be required to spend additional time on outside work assignments. This will normally be conducted in the summer quarter.

SPECIFIC ENTRANCE REQUIREMENTS FOR HOSPITALITY PROGRAMS

1. General college admission requirements
2. Must be in acceptable condition of physical and mental health to meet state requirements for food handling certificate
3. Entry into Hospitality Education Programs requires approval of the Department.

CULINARY TECHNOLOGY

The Culinary Technology curriculum is designed to provide the student with the knowledge and skills to become a chef. This is accomplished through a combination of course work, in-house observation, laboratory practice and supervised work experience in the field.

Food preparation, food cost control, purchasing, beverage cost control and menu planning are typical subjects. The student will also take courses in convenience foods, gardemanger and sanitation, as well as courses in accounting, personal management, human relations, composition and oral communications.

Graduates may find employment in fine hotels, gourmet restaurants, private clubs and steamship lines. The graduate would typically be engaged in a progression of positions, from commis to station chef and sous chef, culminating in the position of executive chef and beyond.

Job Opportunities

Entry Level

Commis (Apprentice):
- Legumier (Vegetable Cook)
- Potagier (Soup Cook)
- Saucier (Sauce Cook)
- Poissonier (Fish Cook)
- Boucher (Butcher)
- Rotisseur (Roast Cook)
- Boulanger (Baker)
- Entremetier (Fry Cook)
- Gardemanger (Cold Meat Cook)

Advanced Level

Chef:
- Legumier (Vegetable Cook)
- Potagier (Soup Cook)
- Saucier (Sauce Cook)
- Poissonier (Fish Cook)
- Boucher (Butcher)
- Rotisseur (Roast Cook)
- Boulanger (Baker)
- Entremetier (Fry Cook)
- Gardemanger (Cold Meat Cook)
- Sous Chef (Assistant)
- Executive Chef
- Certified Executive Chef
- Master Chef

Culinary Technology

			Hrs. Per Week Class	Lab	Prac. Lab	Credit Hrs.
First Quarter (Fall)						
CSP	101	Food Preparation I	3	0	9	6
CSP	107	Food Service Equipment Orientation	1	2	0	2
ENG	101	Fundamentals of English	3	0	0	3
HMA	101	Hospitality Orientation	3	0	0	3
MAT	110	General College Mathematics	5	0	0	5
			15	2	9	19
Second Quarter (Winter)						
CSP	103	Food Preparation II	3	0	12	7
CSP	109	International Cuisine	2	2	0	3
ENG	102	Composition	3	0	0	3
HMA	104	Food Purchasing I	3	0	0	3
HMA	108	Food Cost Control	3	0	0	3
			14	2	12	19
Third Quarter (Spring)						
CSP	106	Food Preparation III	3	0	12	7
CSP	108	Menu Planning	1	2	0	2
ENG	206	Written Communication Skills	3	0	0	3
HMA	109	Food Purchasing II	3	0	0	3
NUT	101	Nutrition	3	0	0	3
			13	2	12	18
Fourth Quarter (Summer)						
CSP	110	Supervised Work Experience	2	0	40	6

			Hrs. Per Week Class	Lab	Prac. Lab	Credit Hrs.
Fifth Quarter (Fall)						
CSP	114	Gardemanger	2	0	3	3
CSP	201	Food Preparation IV	3	0	12	7
CSP	203	Dining Room	1	0	3	2
BUS	110	Business Machines	1	2	0	2
BUS	117	Clerical Accounting	5	2	0	6
ENG	204	Oral Communications	3	0	0	3
			15	4	18	23
Sixth Quarter (Winter)						
CSP	208	Convenience Foods	1	2	0	2
CSP	210	Food Preparation V	3	0	12	7
HMA	213	Food Service Sanitation	3	0	0	3
HMA	215	Beverage Cost Control	3	0	3	4
SOC	201	Sociology	3	0	0	3
			13	2	15	19
Seventh Quarter (Spring)						
CSP	207	Food Preparation VI	3	0	12	7
CSP	214	Wine Appreciation	1	2	0	2
HMA	209	Personnel Management Hospitality Industry	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			10	2	12	15
		Program Totals	82	14	118	119

HOSPITALITY MANAGEMENT AND ADMINISTRATION

The Hospitality Management and Administration curriculum prepares students to enter the hospitality industry as management trainees in hotels, restaurants and clubs. Areas of study include hotel accounting/front office procedures, laws and taxes, sales promotions and advertising, personnel management, housekeeping, layout and design, food and beverage purchasing and cost control, and food preparation and service. An internship program in the field may be offered to enable the student to acquire industry experience.

Job Opportunities

Entry Level

Management Trainee -
- Hotel
- Restaurant
- Club

Advanced Level

Purchasing Agent
Sales Representative
- Hotel & Restaurant Supplies

Executive Housekeeper
Food and Beverage Comptroller
Manager, Front Office
Manager, Resident
Director, Food and Beverage
Hotel Sales Manager
Club Manager
Restaurant Manager
Hotel General Manager

MOUNTAIN TECH LODGE

An on-campus motor lodge, Mountain Tech Lodge, operated and maintained by the students provides practical experience under the direction of college faculty.

Hospitality Management and Administration

			Hrs. Per Week Class	Lab	Prac. Lab	Credit Hrs.
First Quarter (Fall)						
HMA	101	Hospitality Orientation	3	0	0	3
CSP	100	Food Preparation I	3	0	6	5
CSP	107	Food Service Equipment Orientation	1	2	0	2
BUS	110	Business Machines	1	2	0	2
ENG	101	Fundamentals of English	3	0	0	3
MAT	110	General College Mathematics	5	0	0	5
			16	4	6	20
Second Quarter (Winter)						
HMA	104	Food Purchasing I	3	0	0	3
HMA	108	Food Cost Control	3	0	0	3
CSP	102	Food Preparation II	3	0	6	5
BUS	120	Accounting I	3	2	0	4
ENG	102	Composition	3	0	0	3
			15	2	6	18
Third Quarter (Spring)						
HMA	106	Front Office Procedures/ Hotel Accounting	5	2	0	6
HMA	109	Food Purchasing II	3	0	0	3
CSP	104	Food Preparation III	3	0	9	6
BUS	115	Business Law	3	0	0	3
ENG	206	Written Communication Skills	3	0	0	3
			17	2	9	21
Fourth Quarter (Summer)						
HMA	110	Supervised Work Experience	2	0	40	6
Fifth Quarter (Fall)						
HMA	204	Hotel Information Systems	2	2	0	3
HMA	207	Laws of Innkeeping	5	0	0	5
HMA	208	Supervisory Housekeeping	3	2	0	4
HMA	211	Financial Ingredient in Food Service Management	3	2	0	4
ECO	105	Introduction to Economics	5	0	0	5
ENG	204	Oral Communication	3	0	0	3
			21	6	0	24

			Hrs. Per Week Class	Lab	Prac. Lab	Credit Hrs.
Sixth Quarter (Winter)						
HMA	206	Business Management in Hotel-Motel Restaurants	3	0	0	3
HMA	210	Supervisory Housekeeping II	0	2	0	1
HMA	213	Food Service Sanitation	3	0	0	3
HMA	214	Layout and Design I	1	2	0	2
HMA	215	Beverage Cost Control	3	0	3	4
BUS	229	Taxes	3	2	0	4
SOC	201	Sociology	3	0	0	3
			16	6	3	20
Seventh Quarter (Spring)						
HMA	209	Personnel Management Hospitality Industry	3	0	0	3
HMA	212	Sales Promotion and Advertising in Hotels & Restaurants	2	2	0	3
HMA	216	Layout and Design II	2	4	0	4
HMA	217	Supervisory Housekeeping III	0	2	0	1
BUS	247	Insurance	5	0	0	5
PSY	206	Applied Psychology	3	0	0	3
			15	8	0	19
		Program Totals	102	28	64	128

DIVISION OF VOCATIONAL-INDUSTRIAL EDUCATION

The following areas of study are included in the Division of Vocational-Industrial Education:

TECHNICAL DIPLOMA AWARDED

Tool and Die Making

DIPLOMA AWARDED

Air Conditioning, Heating and Refrigeration
Automotive Mechanics
Carpentry and Cabinetmaking
Diesel Vehicle Maintenance
Machinist
Welding

The division offers a variety of courses on a four and eight quarter basis. The areas of study reflect the employment opportunities in western North Carolina. If a student elects to enroll in the division through evening school, the time required for completion will be doubled. The evening division offers up to sixteen hours per week in an area of study. The full-time schedule requires approximately thirty hours per week.

The student enrolled in the division spends most of the time in a shop working under actual industrial conditions. The rest of the time will be in the classroom and laboratory in related subjects. The division requires each student to demonstrate an ability to do work in the chosen trade. Emphasis is placed on becoming proficient in the use of machines, instruments, and other equipment related to a particular area of work.

Certain courses are required of all students in each curriculum. These courses will enhance the student's ability to become a total individual with a proper attitude toward work. A thorough understanding of the American system of economics as it relates to the free enterprise system and corporate structure is required of every student. To accomplish this the vocational student must take either BUS 1103, Small Business Operations or ECO 1107, Consumer Economics.

AIR CONDITIONING, HEATING AND REFRIGERATION

The Air Conditioning, Heating, and Refrigeration curriculum develops an understanding of the basic principles involved in the construction, installation, operation and maintenance of climate control equipment. Courses in blueprint reading, duct construction, welding, circuits and controls, math, science and general education are included to help provide supporting skills necessary for the mechanic to function successfully in the trade.

The air conditioning, heating, and refrigeration mechanic installs, maintains, services, and repairs environmental control systems in residences, department

and food stores, office buildings, industries, restaurants, institutions, and commercial establishments. Job opportunities exist with companies that specialize in air conditioning, heating, and commercial refrigeration installation and service. The graduate should be able to assist in installing mechanical equipment, duct work, and electrical controls necessary in residential and commercial projects. With experience the graduate should be able to service various air conditioning, heating, and refrigeration components; troubleshoot systems; and provide the preventive maintenance required by mechanical equipment. This person may be employed in areas of maintenance, installation, sales, and service in the field of air conditioning, heating and cooling.

Job Opportunities

Entry Level

Air Conditioning Mechanic
Heating and Air Conditioning Mechanic
Heating Mechanic
Refrigeration Mechanic
Heating and Air Conditioning Mechanic Helper
Refrigeration Mechanic Helper

Advanced Level

Environmental Control System Installer-Servicer
Hot Air Furnace Installer & Repairer
Domestic Air Conditioning Installer
Energy Management Systems Installer-Servicer, Sales

Air Conditioning, Heating and Refrigeration

			Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)						
AHR	1121	Fundamentals of Refrigeration: Domestic	3	0	12	7
ELC	1117	Basic Electricity	3	2	0	4
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
WLD	1101	Basic Welding	1	2	0	2
			13	6	12	20
Second Quarter (Winter)						
AHR	1122	Fundamentals of Refrigeration: Commercial	3	0	12	7
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ELC	1118	Applied Electricity	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			13	4	12	19

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Third Quarter (Spring)						
AHR	1123	Principles of Air Conditioning	3	0	9	6
AHR	1124	Principles of Heating: Fuels and Burners	2	0	6	4
BPR	1116	Blueprint Reading: Air Conditioning	2	2	0	3
PSY	206	Applied Psychology	3	0	0	3
			10	2	15	16
Fourth Quarter (Summer)						
AHR	1126	All Year Comfort Systems and A.C. Servicing	2	0	9	5
AHR	1127	Duct Construction and Maintenance	2	0	6	4
BUS	1103	Small Business Operations	3	0	0	3
PHY	1101	Applied Science I	3	2	0	4
			10	2	15	16
		Program Totals	46	14	54	71

AUTOMOTIVE MECHANICS

The Automotive Mechanics curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair and adjust automotive vehicles. Manual skills are developed in practical shop work and the technical understanding of the operating principles involved in the modern automobile are taught through class assignments, discussions and shop practices.

Automobile mechanics maintain and repair mechanical, electrical and body parts of passenger cars, trucks, and buses. In some communities and rural areas they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition and use shop manuals and other technical publications as references for technical data. Persons completing this curriculum may find employment with franchised automobile dealers, independent garages, or may start their own business.

Job Opportunities

Entry Level
General Mechanic
Tune-up Mechanic
Front-end Specialist
Automatic Transmission Specialist
Brake Specialist

Advanced Level
Shop Supervisor
Shop Foreman

Automotive Mechanics

			Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)						
AUT	1101	Internal Combustion Engine	6	0	9	9
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
PSY	206	Applied Psychology	3	0	0	3
			15	2	9	19
Second Quarter (Winter)						
AUT	1102	Engine Electrical and Fuel Systems	7	0	9	10
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
PHY	1101	Applied Science I	3	2	0	4
			14	4	9	19
Third Quarter (Spring)						
AUT	1121	Braking Systems	2	0	3	3
AUT	1123	Automotive Chassis and Suspension Systems	3	0	9	6
WLD	1101	Basic Welding	1	2	0	2
			6	2	12	11
Fourth Quarter (Summer)						
AUT	1124	Automotive Power Train Systems	4	0	6	6
AUT	1125	Automotive Services	6	0	6	8
AUT	1128	Automotive Air Conditioning	2	0	3	3
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
			15	0	15	20
		Program Totals	50	8	45	69

CARPENTRY AND CABINETMAKING

Carpenters construct, erect, install and repair structures of wood, plywood and wallboard, using hand and power tools. This curriculum in carpentry is designed to prepare individuals with skills and knowledge of construction with wood. The curriculum includes mathematics, blueprint reading, methods of construction and information on building materials and energy efficient construction.

Carpenters work on new construction and maintain and repair many types of existing structures, both residential and commercial. They have an understanding of building materials, concrete form construction, rough framing, roof and stair construction, the application of interior and exterior trim, insulation, and other energy saving materials and the installation of cabinets and fixtures.

Most carpenters are employed by contractors in the building construction fields. When specializing in a particular phase of carpentry, the job may be designated according to the specialty as rough carpenter, framing carpenter, form carpenter, scaffolding carpenter, acoustical insulating carpenter and finish carpenter.

Job Opportunities

Entry Level	Advanced Level (with experience)
Carpenter	Carpenter Foreman
Roofer	Finish Carpenter
Cabinet Installer	Cabinetmaker
Maintenance Carpenter	

Carpentry and Cabinetmaking

			Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)						
CAR	1102	Cabinetmaking I	5	0	15	10
BPR	1107	Blueprint Reading: Construction Trades	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
			12	4	15	19
Second Quarter (Winter)						
CAR	1101	Carpentry I	5	0	6	7
CAR	1104	Cabinetmaking II	0	0	9	3
BPR	1109	Blueprint Reading: Construction Trades	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			12	2	15	18
Third Quarter (Spring)						
CAR	1103	Carpentry II	6	0	15	11
DFT	1127	Construction Trades: Drafting I	2	2	0	3
PSY	206	Applied Psychology	3	0	0	3
			11	2	15	17
Fourth Quarter (Summer)						
CAR	1105	Advanced Carpentry Projects	2	0	24	10
BUS	1103	Small Business Operations	3	0	0	3
DFT	1128	Construction Trades: Drafting II	2	2	0	3
			7	2	24	16
		Program Totals	42	10	69	70

DIESEL VEHICLE MAINTENANCE

The Diesel Vehicle Maintenance curriculum provides a program for developing the basic knowledge and skills needed in diesel vehicle maintenance. Manual skills are developed in practical shop work.

The use of diesel engines is found in farm and construction equipment, electric generators, trucks, buses, trains, automobiles, and ships. Many diesel vehicle

mechanics specialize in maintenance and repair of equipment, others specialize in rebuilding engines.

Diesel vehicle mechanics are instructed through class assignments, discussion and shop practice to maintain and repair engines, chassis and suspensions, and power trains used to power farm equipment, construction equipment, buses and trucks. They use handtools, precision measuring and testing instruments, and power tools in overhauling and maintaining diesel powered equipment.

Job Opportunities

Diesel Mechanic
Diesel-Mechanic Apprentice
Diesel-Mechanic Helper
Fuel-Injection Servicer
Repairer, Heavy
Construction-Equipment-Mechanic Helper
Spring-Repairer Helper, Hand
Maintenance Mechanic Helper
Tractor-Mechanic Helper

Opportunities in heavy equipment maintenance will be found within dealerships, trucking companies, public transportation companies, general contractors, farm implement dealers, and industries that maintain heavy equipment.

Diesel Vehicle Maintenance

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
HEV	1101	Diesel Engine Theory and Practice	5	0	12	9
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
MEC	1101	Elementary Hydraulic Principles	2	3	0	3
			13	5	12	19
Second Quarter (Winter)						
HEV	1102	Diesel-Electrical, Fuel, Lubricating and Cooling Systems	5	0	12	9
MEC	1124	Metallurgy	3	0	0	3
PHY	1101	Applied Science I	3	2	0	4
WLD	1102	Basic Welding	2	0	3	3
			13	2	15	19
Third Quarter (Spring)						
HEV	1103	Diesel-Hydraulic Systems, Steering, Suspension, Braking, Injector Testing and Servicing	6	0	12	10
ECO	1107	Consumer Economics	3	0	0	3
PHY	1102	Applied Science II	3	2	0	4
MES	1112	Machine Shop Processes	1	0	3	2
			13	2	15	19

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Fourth Quarter (Summer)						
HEV	1105	Diesel Service and Repair	4	0	6	6
HEV	1107	Power Train Systems	4	0	6	6
ENG	1102	Communication Skills	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			14	0	12	18
		Program Totals	53	9	54	75

MACHINIST

The Machinist curriculum gives individuals the opportunity to acquire basic skills and related technical information necessary to gain employment as a machinist. The machinist is a skilled metalworker who shapes metal by using machine tools and hand tools. Machinists must be able to set up and operate the machine tools found in a modern shop. The machinist is able to select the proper tools and materials required for each job and to plan the cutting and finishing operations in their proper order so that the work can be finished according to blueprint or written specifications. The machinist makes computations relating to dimensions of work, tooling, feeds and speeds of machining. Precision measuring instruments are used to measure the accuracy of work. The machinist also must know the characteristics of metals so that annealing and hardening of tools and metal parts can be accomplished in the process of turning a block of metal into an intricate precise part.

Job Opportunities

Entry Level
Machinist Apprentice
Die Maker Apprentice
Toolmaker Apprentice
Tool and Die Maker Apprentice
Machine Set-up Operator
Quality Control Foreman
Turret Lathe Set-up Operator
Tool Machine Set-up Operator
Electrical Discharge Machine Set-up Operator

Advanced Level
Machinist
Maintenance Machinist

Machinist

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
MES	1101	Machine Shop I	3	0	12	7
BPR	1104	Blueprint Reading: Mechanical	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
PSY	206	Applied Psychology	3	0	0	3
			13	4	12	19

			Hrs. Per Week Class	Lab	Shop	Credit Hrs.
Second Quarter (Winter)						
MES	1102	Machine Shop II	3	0	12	7
BPR	1105	Blueprint Reading: Mechanical	1	2	0	2
ENG	1102	Communications Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
PHY	1100	Industrial Science	3	2	0	4
			13	4	12	19
Third Quarter (Spring)						
MES	1103	Machine Shop III	3	0	12	7
BPR	1106	Blueprint Reading: Mechanical	1	2	0	2
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
MAT	1104	Trigonometry	3	0	0	3
MEC	1115	Treatment of Ferrous and Non-Ferrous Metals	1	0	3	2
			11	2	15	17
Fourth Quarter (Summer)						
MES	1104	Machine Shop IV	3	0	12	7
MES	1106	Introduction to Numerical Control	3	3	0	4
MAT	1123	Machinist Mathematics	3	0	0	3
WLD	1101	Basic Welding	1	2	0	2
			10	5	12	16
		Program Totals	47	15	51	71

TOOL AND DIE MAKING

The Tool and Die Making curriculum prepares machinists for the machining of tools and dies for the mass production of parts. These parts may be produced by punching, stamping or molding them into the required sizes and shapes. It is the responsibility of tool and die makers to produce the special tools and fixtures for these production operations. They may also produce the gauges and other inspection tools used in checking mass produced parts.

Students enrolling in the Tool and Die Making program should gain the necessary skills and related information to make it possible for them to obtain entry level employment in this field. Typical jobs which might be secured in the manufacturing field include: Toolmaker Trainee, Diemaker Trainee, Moldmaker Trainee, Tool Repairman, Tool (Set-up) and Tool Inspector. A tool and die maker analyzes a variety of specifications, lays out metal stock and sets up and operates machine tools. They fit and assemble parts to make and repair metal working dies, cutting tools, jigs, fixtures, gages and machinists' hand tools. They compute dimensions, decide on machining to be done and plan layout and assembly operations.

Job Opportunities

Machinist
Metal Patternmaker Apprentice
Lay-Out Worker
Machine Builder
Tool and Die Maker Apprentice
Toolmaker Apprentice
Gauge and Instrument Inspector
Tool Inspector
Bench Toolmaker
Die Finisher
Plastic Fixture Builder
Metal Pattern Maker
Lay-out Inspector
Set-up and Lay-out Inspector
Die Casting and Plastic Molding Mold Maker
Toolmaker
Tool and Die Maker
Die Maker

Specific Entrance Requirements

Students accepted for the Tool and Die Making curriculum must have completed the Machinist curriculum or be able to demonstrate Journeyman level machinist skills. To advance from the Machinist curriculum to the Tool and Die Making curriculum the student must have obtained a grade of "B" or better in MES 1103, MES 1104, MAT 1104 and MAT 1123. Any exceptions to these requirements will be decided by a committee chaired by the Chairperson of the Tool and Die Making department.

Tool and Die Making*

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Fifth Quarter (Fall)						
TDM	1201	Machine Processes	3	0	12	7
DFT	1207	General Machine Drafting	2	4	0	4
MAT	1203	Trigonometry	3	0	0	3
			8	4	12	14
Sixth Quarter (Winter)						
TDM	1202	Machine Processes	3	0	12	7
ELC	1201	Electricity-Industrial	2	2	0	3
MAT	1204	Compound Angles and Curves	5	0	0	5
MEC	1203	Metallurgy	3	0	0	3
			13	2	12	18
Seventh Quarter (Spring)						
TDM	1204	Machine Processes	3	0	12	7
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
BPR	1208	Blueprint Reading: Tool and Die	1	4	0	3
MEC	1209	Hydraulics and Pneumatics	3	0	0	3
			10	6	12	17

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Eighth Quarter (Summer)						
TDM	1206	Machine Processes	3	0	12	7
TDM	1207	Special Problems and Molding	3	4	0	5
DFT	1209	Tool Design and Planning	2	4	0	4
			8	8	12	16
		Program Totals	39	20	48	65

*Students who have not completed the machinist curriculum must also take ENG 1102 and PSY 206. Total Program credit hours 71.

WELDING

The Welding curriculum gives students sound understanding of the principles, methods, techniques and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure to form a permanent bond between intersecting metals.

Welding offers employment in practically any industry: shipbuilding, automotive, aircraft, guided missiles, heavy equipment, railroads, construction, pipefitting, production shops, job shops and many others.

Job Opportunities

Entry Level
Arc Welding
Arc Welding - Machine Operator
Gas Welding - Machine Operator
Gas Welding
Welder - Assembler
Combination Welder

Advanced Level
Layout Worker I
Welder - Fitter

Welding

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
WLD	1120	Oxyacetylene Welding and Cutting	3	0	12	7
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamental of Mathematics	5	0	0	5
MEC	1124	Metallurgy	3	0	0	3
			13	4	12	19

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Second Quarter (Winter)						
WLD	1121	Arc Welding	3	0	12	7
BPR	1117	Blueprint Reading: Welding	1	2	0	2
ELC	1119	Electricity for Welders	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			13	4	12	19
Third Quarter (Spring)						
WLD	1112	Mechanical Testing & Inspection	1	3	0	2
WLD	1122	Commercial & Industrial Practices	3	0	9	6
WLD	1123	Inert Gas Welding	1	0	3	2
MES	1112	Machine Shop Processes	1	3	0	2
PSY	206	Applied Psychology	3	0	0	3
			9	6	12	15
Fourth Quarter (Summer)						
WLD	1124	Pipe Welding	3	0	12	7
WLD	1125	Certification Practices	3	0	6	5
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
DFT	1126	Pattern Development & Layout	0	3	0	1
			9	3	18	16
		Program Totals	44	17	54	69

EVENING AND WEEKEND CURRICULUMS

Most of the curricular classes offered in the day are also offered on a part-time basis in the evenings or on the weekends. Classes meet both on campus and at various off-campus sites. In addition to classes in the formatted program plans, many single classes are offered for students who seek personal or career advancements.

Beyond individual classes, students may "cluster" selected classes to meet more advanced goals. Any of these individually selected classes may be undertaken by "special schedule" or "unclassified" students on a space-available basis if prerequisites have been met.

Evening classes begin at 4:00 p.m. with the majority starting at 6:30 p.m.

Requirements for degree and diploma are the same for day and evening programs.

INDEX

Program Offerings

BUSINESS ADMINISTRATION

Associate in Applied Science Degree

Each student will be assigned an advisor and will be counseled prior to pre-registration. Electives will be offered based upon results from demand surveys conducted early in the previous quarter. The student must have departmental approval of his/her schedule prior to registration.

The AAS degree in Business Administration will be awarded to a student meeting College requirements and completing required courses **plus a minimum of 27 additional credit hours of business department courses.**

BUSINESS ADMINISTRATION

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
			7	4	9
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	Business Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Economics	5	0	5
ENG	101	Fundamentals of English	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11
Fourth Quarter (Summer)					
BUS	110	Business Machines	1	2	2
BUS	125	Introduction to Banking Fundamentals	4	0	4
IFM	100	Computer Keyboarding	1	2	2
PSY	206	Applied Psychology	3	0	3
			9	4	11
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9

			Hrs. Per Week Class	Lab	Credit Hrs.
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	3	0	3
			8	4	10
Seventh Quarter (Spring)					
BUS	239	Introduction to Marketing	3	2	4
ELECTIVES					
			3+	2+	4+
Eighth Quarter (Summer)					
BUS	123	Finance I	5	0	5
ELECTIVES					
			5+	0+	5+
Ninth Quarter (Fall)					
ELECTIVES					
Tenth Quarter (Winter)					
BUS	233	Personnel Management And Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
IFM	200	Microcomputer Operations	2	2	3
			8	2	9
Eleventh Quarter (Spring)					
BUS	247	Insurance	5	0	5
ELECTIVES					
			5+	0+	5+
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
		Program Totals	81	22	119*

*Business Administration must take a minimum of 27 additional credit hours of business and support courses to be selected with the faculty advisor. Total credit hours 119.

Accounting

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
			7	4	9
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	Business Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Economics	5	0	5
ENG	101	Fundamentals of English	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11
Fourth Quarter (Summer)					
BUS	110	Business Machines	1	2	2
BUS	125	Introduction to Banking Fundamentals	4	0	4
IFM	100	Computer Keyboarding	1	2	2
PSY	206	Applied Psychology	3	0	3
			9	4	11
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	3	0	3
			8	4	10
Seventh Quarter (Spring)					
BUS	122	Accounting III	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8

			Hrs. Per Week Class	Lab	Credit Hrs.
Eighth Quarter (Summer)					
BUS	123	Finance I	5	0	5
BUS	225	Cost Accounting I	5	0	5
			10	0	10
Ninth Quarter (Fall)					
BUS	223	Intermediate Accounting	5	0	5
BUS	226	Cost Accounting II	3	2	4
			8	2	9
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
IFM	200	Microcomputer Operations	2	2	3
			8	2	9
Eleventh Quarter (Spring)					
BUS	247	Insurance	5	0	5
BUS	269	Auditing	5	0	5
			10	0	10
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
Thirteenth Quarter (Fall)					
BUS	230	Taxes I	3	2	4
			3	2	4
		Program Totals	105	28	119

BANKING AND FINANCE

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
			7	4	9
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	Business Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Economics	5	0	5
ENG	101	Fundamentals of English	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11
Fourth Quarter (Summer)					
BUS	110	Business Machines	1	2	2
BUS	125	Introduction to Banking Fundamentals	4	0	4
IFM	100	Computer Keyboarding	1	2	2
PSY	206	Applied Psychology	3	0	3
			9	4	11
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	3	0	3
			8	4	10
Seventh Quarter (Spring)					
BUS	122	Accounting III	3	2	4
BUS	239	Introduction to Marketing	3	2	4
			6	4	8

			Hrs. Per Week Class	Lab	Credit Hrs.
Eighth Quarter (Summer)					
BUS	123	Finance I	5	0	5
BUS	206	Banking and Finance Credit	3	2	4
			8	2	9
Ninth Quarter (Fall)					
BUS	207	Principles of Bank Operations	5	0	5
BUS	238	Consumer Behavior	5	0	5
			10	0	10
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
IFM	200	Microcomputer Operations	2	2	3
			8	2	9
Eleventh Quarter (Spring)					
BUS	208	Financial Statement Analysis	5	0	5
BUS	247	Insurance	5	0	5
			10	0	10
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
Thirteenth Quarter (Fall)					
BUS	248	Marketing Research	3	2	4
			3	2	4
		Program Totals	105	28	119

INDUSTRIAL MANAGEMENT

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
			7	4	9

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	Business Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Economics	5	0	5
ENG	101	Fundamentals of English	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11
Fourth Quarter (Summer)					
BUS	110	Business Machines	1	2	2
BUS	125	Introduction to Banking Fundamentals	4	0	4
IFM	100	Computer Keyboarding	1	2	2
PSY	206	Applied Psychology	3	0	3
			9	4	11
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	3	0	3
			8	4	10
Seventh Quarter (Spring)					
ISC	102	Industrial Safety	3	0	3
BUS	239	Introduction to Marketing	3	2	4
BUS	249	Inventory Control	3	0	3
			9	2	10
Eighth Quarter (Summer)					
ISC	209	Plant Layout	1	4	3
BUS	123	Finance I	5	0	5
			6	4	8
Ninth Quarter (Fall)					
ISC	202	Quality Control	3	2	4
ISC	203	Time and Motion Study	1	4	3
			4	6	7

			Hrs. Per Week Class	Lab	Credit Hrs.
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
IFM	200	Microcomputer Operations	2	2	3
			8	2	9
Eleventh Quarter (Spring)					
ISC	211	Work Measurement	3	2	4
BUS	247	Insurance	5	0	5
			8	2	9
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
		Program Totals	95	34	112

MARKETING AND RETAILING

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	100	Reading Comprehension	1	2	2
			7	4	9
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	Business Mathematics	5	0	5
			8	2	9
Third Quarter (Spring)					
ECO	105	Economics	5	0	5
ENG	101	Fundamentals of English	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			11	0	11

			Hrs. Per Week Class	Lab	Credit Hrs.
Fourth Quarter (Summer)					
BUS	110	Business Machines	1	2	2
BUS	125	Introduction to Banking Fundamentals	4	0	4
IFM	100	Computer Keyboarding	1	2	2
PSY	206	Applied Psychology	3	0	3
			9	4	11
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			8	2	9
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	3	0	3
			8	4	10
Seventh Quarter (Spring)					
BUS	239	Introduction to Marketing	3	2	4
BUS	247	Insurance	5	0	5
			8	2	9
Eighth Quarter (Summer)					
BUS	123	Finance I	5	0	5
BUS	206	Banking and Finance Credit	3	2	4
			8	2	9
Ninth Quarter (Fall)					
BUS	238	Consumer Behavior	5	0	5
BUS	248	Marketing Research	3	2	4
			8	2	9
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
IFM	200	Microcomputer Operations	2	2	3
ENG	204	Oral Communication	3	0	3
			8	2	9
Eleventh Quarter (Spring)					
BUS	237	Advertising	5	0	5
BUS	241	Retailing	3	0	3
BUS	266	Professional Sales Techniques	3	0	3
			11	0	11

			Hrs. Per Week Class	Lab	Credit Hrs.
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	3	0	3
			9	2	10
		Program Totals	103	26	116

MANUFACTURING RESOURCES PLANNING

Associate in Applied Science Degree

MRP 101 and MRP 102 will be offered sequentially in the Fall and Winter quarters. Subsequent MRP courses will be scheduled as demand becomes adequate.

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
MRP	101	Manufacturing Resources Planning I	4	0	4
ENG	100	Reading Comprehension	1	2	2
MAT	100	Basic Mathematics	5	0	5
			10	2	11
Second Quarter (Winter)					
MRP	102	Manufacturing Resources Planning II	4	0	4
BUS	101	Introduction to Business	3	0	3
EDP	104	Introduction to Business Data Processing	2	2	3
			9	2	10
Third Quarter (Spring)					
BUS	239	Introduction to Marketing	3	2	4
MAT	101	Algebra and Trigonometry I	5	0	5
			8	2	9
Fourth Quarter (Summer)					
MRP	205	Methods, Standards, Routings	4	0	4
BPR	111	Blueprint Reading	1	2	2
MAT	214	Statistics	5	0	5
			10	2	11
Fifth Quarter (Fall)					
MRP	105	Inventory Management	4	0	4
ENG	101	Fundamentals of English	3	0	3
MEC	111	Manufacturing Processes	3	3	4
			10	3	11

			Hrs. Per Week Class	Lab	Credit Hrs.
Sixth Quarter (Winter)					
MRP	203	Master Planning	5	0	5
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			11	0	11
Seventh Quarter (Spring)					
MRP	103	Materials Requirements Planning	4	0	4
BUS	235	Business Organization and Management	3	2	4
ENG	103	Report Writing	3	0	3
			10	2	11
Eighth Quarter (Summer)					
MRP	201	Capacity Management	4	0	4
MRP	211	Purchasing	4	0	4
ECO	102	Economics I	3	0	3
IFM	100	Computer Keyboarding	1	2	2
			12	2	13
Ninth Quarter (Fall)					
MRP	207	Shop Floor Control	4	0	4
MRP	209	Factory Layout and Design	3	0	3
BUS	140	Accounting Concepts for Manufacturing/Industry	3	2	4
			10	2	11
Tenth Quarter (Winter)					
BUS	222	Control Accounting	3	2	4
IFM	200	Microcomputer Operations	2	2	3
			5	4	7
Eleventh Quarter (Spring)					
MRP	216	Advanced Projects	3	0	3
MRP	217	Certification Review	2	2	3
ENG	204	Oral Communications	3	0	3
			8	2	9
		Program Totals	103	23	114

BUSINESS COMPUTER PROGRAMMING

Associate in Applied Science Degree
(Offered Even Years)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	100	Reading Comprehension	1	2	2
MAT	100	Basic Mathematics	5	0	5
			8	4	10
Second Quarter (Winter)					
EDP	107	Operating Systems	3	2	4
MAT	101	Algebra & Trigonometry I	5	0	5
			8	2	9
Third Quarter (Spring)					
EDP	115	Program Design and Development	4	0	4
IFM	100	Computer Keyboarding	1	2	2
MAT	102	Algebra and Trigonometry	5	0	5
			10	2	11
Fourth Quarter (Summer)					
EDP	200	Introduction to Microcomputers	2	2	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
			8	4	10
Fifth Quarter (Fall)					
EDP	201	Advanced Microcomputers	2	2	3
BUS	101	Introduction to Business	3	0	3
BUS	121	Accounting II	3	2	4
			8	4	10
Sixth Quarter (Winter)					
EDP	208	Commercial BASIC	2	2	3
MAT	214	Statistics	5	0	5
			7	2	8
Seventh Quarter (Spring)					
EDP	218	Programming I - RPG II	4	0	4
EDP	219	Programming II - RPG II	1	3	2
BUS	222	Control Accounting	3	2	4
			8	5	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Eighth Quarter (Summer)					
ENG	102	Composition	3	0	3
MAT	112	Mathematics of Finance	3	2	4
			6	2	7
Ninth Quarter (Fall)					
EDP	215	Programming I - COBOL	4	0	4
EDP	216	Programming II - COBOL	1	3	2
BUS	234	Introduction to Management	3	2	4
			8	5	10
Tenth Quarter (Winter)					
EDP	118	Data Base Management Concepts	3	2	4
EDP	220	Systems Analysis and Design	2	3	3
			5	5	7
Eleventh Quarter (Spring)					
EDP	160	EDP Operations	2	2	3
EDP	221	Advanced Projects	1	3	2
ENG	103	Report Writing	3	0	3
			6	5	8
Twelfth Quarter (Summer)					
ECO	102	Principles of Economics	3	0	3
ECO	107	Consumer Economics	3	0	3
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			12	0	12
		Program Totals	94	40	112

LAW ENFORCEMENT TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CJC	101	Introduction to Criminal Justice	5	0	5
ENG	100	Reading Comprehension	1	2	2
PSY	101	Introduction to Psychology	3	0	3
			9	2	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
CJC	102	Introduction to Criminology	5	0	5
ENG	101	Fundamentals of English	3	0	3
POL	103	State and Local Government	4	0	4
			12	0	12
Third Quarter (Spring)					
CJC	115	Criminal Law I	3	0	3
EMS	100	Introduction to Emergency Medical Services	2	2	3
ENG	102	Composition	3	0	3
PSY	203	Abnormal Psychology	3	0	3
			11	2	12
Fourth Quarter (Summer)					
CJC	205	Criminal Evidence	4	0	4
CJC	216	Criminal Law II	3	0	3
MAT	100	Basic Mathematics	5	0	5
			12	0	12
Fifth Quarter (Fall)					
CJC	201	Motor Vehicle Law	3	0	3
CJC	210	Criminal Investigation I	4	0	4
ENG	204	Oral Communication	3	0	3
PHO	201	Introduction to Photography	1	2	2
			11	2	12
Sixth Quarter (Winter)					
CJC	211	Introduction to Criminalistics	4	2	5
CJC	213	Criminal Investigation II	4	0	4
PSY	151	Applied Psychology for Law Enforcement	3	0	3
			11	2	12
Seventh Quarter (Spring)					
CJC	110	Introduction to Juvenile Justice	5	0	5
CJC	125	Judicial Process	4	0	4
CJC	200	Crime Prevention	3	0	3
			12	0	12
Eighth Quarter (Summer)					
CJC	202	Traffic Planning and Management	3	2	4
CJC	217	Patrol Procedures	3	0	3
SOC	201	Sociology	3	0	3
			9	2	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Ninth Quarter (Fall)					
CJC	212	Narcotics, Drugs, and Human Behavior	3	2	4
CJC	220	Police Organization, Administration, and Supervision	5	0	5
			8	2	9
Tenth Quarter (Winter)					
CJC	206	Community Relations	3	0	3
ENG	103	Report Writing	3	0	3
			6	0	6
Eleventh Quarter (Spring)					
		Approved Electives			6
Twelfth Quarter (Summer)					
		Approved Electives			6
		Program Subtotals	101	12	107*

*Plus 12 credit hours of electives, making total credit hours 119.

Related Electives

In addition to required courses, students must complete a minimum of twelve (12) credit hours of approved electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has departmental approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Selected electives may be scheduled from the courses indicated below. Students may also select a maximum of two (2) credit hours of Physical Education.

BIO	101	Human Anatomy and Physiology I
BIO	102	Human Anatomy and Physiology II
BIO	111	Basic Life Sciences
BUS	100	Contemporary Business
BUS	101	Introduction to Business
BUS	110	Business Machines
BUS	114	Business Law
BUS	120	Accounting I
BUS	121	Accounting II
BUS	125	Introduction to Banking Fundamentals
BUS	233	Personnel Management and Supervision
BUS	234	Introduction to Management

CHM	100	Introduction to Chemistry
CHM	101	Fundamentals of Physiological Chemistry
CHM	111	General Chemistry
CJC	105	Introduction to Correction
CJC	106	Probation and Parole
CJC	107	Police Liability
CJC	111	Defense Tactics
CJC	112	Legal Research
CJC	116-118	CJC Internship (1 Cr. Hr. Each)
CJC	250-252	Topics in Criminal Justice - Law Enforcement
ECO	102	Economics I
ECO	104	Economics II
ECO	107	Consumer Economics
ECO	108	Consumer Economics
EDP	104	Introduction to Business Data Processing
EDP	105	Introduction to Scientific Data Processing
MAT	101	Algebra and Trigonometry I
MAT	105	Introduction to Algebra
MAT	110	Business Mathematics
MAT	214	Statistics
PSY	206	Applied Psychology
SSC	101	Basic Typewriting

*Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of three (3) credit hours may be earned through internships. Prerequisite: Permission of the department chairperson.

CIVIL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree
(Offered odd years)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CIV	217	Construction Methods, Equipment, and Materials	4	4	6
MAT	101	Algebra and Trigonometry I	5	0	5
			9	4	11

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
CIV	220	Engineering Construction and Project Planning	4	0	4
MAT	102	Algebra and Trigonometry II	5	0	5
PSY	206	Applied Psychology	3	0	3
			12	0	12
Third Quarter (Spring)					
DFT	101	Drafting	2	4	4
PHY	101	Properties of Matter	3	2	4
			5	6	8
Fourth Quarter (Summer)					
CIV	101	Surveying I	2	6	4
PHY	102	Mechanics	3	2	4
			5	8	8
Fifth Quarter (Fall)					
CIV	102	Surveying II	2	6	4
*MAT	103	Analytical Geometry and Calculus I	5	0	5
			7	6	9
Sixth Quarter (Winter)					
CIV	114	Statics	5	0	5
DFT	104	Civil Drafting	2	4	4
			7	4	9
Seventh Quarter (Spring)					
CIV	216	Strength of Materials	5	0	5
CHM	102	Engineering Chemistry	2	2	3
EDP	105	Introduction to Scientific Data Processing	2	2	3
			9	4	11
Eighth Quarter (Summer)					
CIV	103	Route Surveying	2	6	4
CIV	218	Properties of Plain Portland Concrete	2	2	3
ENG	101	Fundamentals of English	3	0	3
			7	8	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Ninth Quarter (Fall)					
CIV	202	Properties of Soil	2	2	3
CIV	221	Properties of Asphalt	2	2	3
ENG	102	Composition	3	0	3
SOC	201	Sociology	3	0	3
			10	4	12
Tenth Quarter (Winter)					
CIV	219	Steel and Timber Construction	4	4	6
CIV	228	Contracts, Engineering Relations, and Ethics	2	2	3
ENG	204	Oral Communications	3	0	3
			9	6	12
Eleventh Quarter (Spring)					
CIV	224	Reinforced Portland Concrete	2	2	3
CIV	225	Estimates, Codes and Specifications	4	4	6
ENG	103	Report Writing	3	0	3
			9	6	12
Twelfth Quarter (Summer)					
CIV	204	Surveying III	2	6	4
CIV	229	Branches of Engineering Technology	3	3	4
			5	9	8
		Program Totals	94	65	122

*MAT 204 may be substituted for MAT 103.

ELECTRONICS ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

This program, at night, is designed with two quarters of mathematics scheduled before entrance into major area Electronic courses. With this plan, we hope to prepare the student for greater success in the study of Electronics Technology.

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
MAT	101	Algebra & Trigonometry I	5	0	5
PHY	101	Properties of Matter	3	2	4
			8	2	9

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
MAT	102	Algebra & Trigonometry II	5	0	5
PHY	102	Mechanics	3	2	4
			8	2	9
Third Quarter (Spring)					
ELN	101	Fundamentals of D.C.	4	4	6
MAT	103	Analytical Geometry	5	0	5
			9	4	11
Fourth Quarter (Summer)					
ELN	102	Fundamentals of A.C.	4	4	6
CHM	102	Engineering Chemistry	2	2	3
			6	6	9
Fifth Quarter (Fall)					
ELN	103	A.C. Network Analysis	4	4	6
MAT	201	Calculus II	5	0	5
			9	4	11
Sixth Quarter (Winter)					
ELN	106	Introduction to Solid State Devices	4	4	6
ENG	101	Fundamentals of English	3	0	3
ENG	204	Oral Communication	3	0	3
			10	4	12
Seventh Quarter (Spring)					
ELN	207	Transistor Amplifier Analysis	4	4	6
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			10	4	12
Eighth Quarter (Summer)					
ELN	209	Circuit Analysis	4	4	6
EDP	105	Introduction to Scientific Data Processing	2	2	3
SOC	201	Sociology	3	0	3
			9	6	12
Ninth Quarter (Fall)					
ELN	217	Introduction to Special Devices	4	4	6
ENG	103	Report Writing	3	0	3
MAT	121	Numbering Systems and Boolean	3	0	3
			10	4	12

			Hrs. Per Week Class	Lab	Credit Hrs.
Tenth Quarter (Winter)					
ELN	211	Digital Logic Circuits	4	4	6
DFT	109	Electronic Drafting	2	4	4
			6	8	10
Eleventh Quarter (Spring)					
ELN	213	Waveshaping and Pulse Circuit	4	4	6
ELN	219	Industrial Instrumentation	4	4	6
			8	8	12
Twelfth Quarter (Summer)					
ELN	214	Microprocessors	4	4	6
ELN	221	Electronic Circuit Design	1	6	3
			5	10	9
		Program Totals	98	62	128

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY

Associate in Applied Science Degree
(Offered Odd Years)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
MAT	102	Algebra and Trigonometry II	5	0	5
			7	4	9
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	2	6	4
*MAT	204	Applied Mathematics	5	0	5
			7	6	9
Fourth Quarter (Summer)					
PHY	101	Properties of Matter	3	2	4
MEC	111	Manufacturing Processes	3	3	4
			6	5	8

			Hrs. Per Week Class	Lab	Credit Hrs.
Fifth Quarter (Fall)					
DFT	103	Drafting	2	4	4
PHY	102	Mechanics	3	2	4
			5	6	8
Sixth Quarter (Winter)					
DFT	201	Design Drafting I	2	6	4
PHY	103	Electricity	3	2	4
			5	8	8
Seventh Quarter (Spring)					
DFT	205	Design Drafting II	2	6	4
DFT	220	Computer Aided Drafting	2	4	4
			4	10	8
Eighth Quarter (Summer)					
DFT	211	Mechanisms and Kinematic Design	2	6	4
MEC	101	Machine Processes	2	4	4
			4	10	8
Ninth Quarter (Fall)					
DFT	212	Jig and Fixture Design	2	6	4
ENG	101	Fundamentals of English	3	0	3
PSY	206	Applied Psychology	3	0	3
			8	6	10
Tenth Quarter (Winter)					
DFT	206	Design Drafting III	2	6	4
ENG	102	Composition	3	0	3
SOC	201	Sociology	3	0	3
			8	6	10
Eleventh Quarter (Spring)					
DFT	221	Advanced Computer Aided Drafting and Design	2	6	4
MEC	210	Physical Metallurgy	3	3	4
			5	9	8
Twelfth Quarter (Summer)					
EDP	105	Introduction to Scientific Data Processing	2	2	3
ELC	201	Electrical Machinery	3	0	3
MEC	105	Statics	5	0	5
			10	2	11

			Hrs. Per Week Class	Lab	Credit Hrs.
Thirteenth Quarter (Fall)					
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
			8	3	9
Fourteenth Quarter (Winter)					
ENG	103	Report Writing	3	0	3
ENG	204	Oral Communications	3	0	3
			6	0	6
		Program Totals	90	79	121

*MAT 103 may be substituted for MAT 204.

MECHANICAL ENGINEERING TECHNOLOGY

Associate in Applied Science Degree
(Offered Even Years)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
MAT	102	Algebra and Trigonometry II	5	0	5
			7	4	9
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	2	6	4
MAT	103	Analytic Geometry and Calculus	5	0	5
			7	6	9
Fourth Quarter (Summer)					
DFT	220	Computer Aided Drafting	2	4	4
PHY	101	Properties of Matter	3	2	4
			5	6	8
Fifth Quarter (Fall)					
MEC	212	Practical Automation	4	4	6
PHY	102	Mechanics	3	2	4
			7	6	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Sixth Quarter (Winter)					
MEC	111	Manufacturing Processes	3	3	4
PHY	103	Electricity	3	2	4
			6	5	8
Seventh Quarter (Spring)					
MEC	101	Machine Processes	2	4	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
ELC	201	Electrical Machinery	3	0	3
			7	6	10
Eighth Quarter (Summer)					
MEC	105	Statics	5	0	5
CHM	102	Engineering Chemistry	2	2	3
			7	2	8
Ninth Quarter (Fall)					
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
			8	3	9
Tenth Quarter (Winter)					
MEC	206	Dynamics	3	0	3
MEC	210	Physical Metallurgy	3	3	4
ENG	101	Fundamentals of English	3	0	3
			9	3	10
Eleventh Quarter (Spring)					
MEC	208	Machine Design I	4	0	4
ENG	102	Composition	3	0	3
ENG	204	Oral Communication	3	0	3
ISC	102	Industrial Safety	3	0	3
			13	0	13
Twelfth Quarter (Summer)					
MEC	209	Machine Design II	4	0	4
MEC	220	Power Systems	3	2	4
SOC	201	Sociology	3	0	3
			10	2	11
Thirteenth Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
ENG	103	Report Writing	3	0	3
PSY	206	Applied Psychology	3	0	3
			9	0	9
		Program Totals	102	47	123

Tool Design Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
MAT	101	Algebra and Trigonometry I	5	0	5
			7	4	9
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
MAT	102	Algebra and Trigonometry II	5	0	5
			7	4	9
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	2	6	4
*MAT	204	Applied Mathematics	5	0	5
			7	6	9
Fourth Quarter (Summer)					
MEC	111	Manufacturing Processes	3	3	4
PHY	101	Properties of Matter	3	2	4
			6	5	8
Fifth Quarter (Fall)					
TDT	105	Manufacturing Cost Analysis	2	0	2
DFT	103	Drafting	2	4	4
PHY	102	Mechanics	3	2	4
			7	6	10
Sixth Quarter (Winter)					
TDT	101	Geometric Tolerances and Inspection Procedures	1	2	2
MEC	105	Statics	5	0	5
PSY	206	Applied Psychology	3	0	3
			9	2	10
Seventh Quarter (Spring)					
EDP	105	Introduction to Scientific Data Processing	2	2	3
ENG	101	Fundamentals of English	3	0	3
MEC	101	Machine Processes	2	4	4
			7	6	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Eighth Quarter (Summer)					
ENG	102	Composition	3	0	3
MEC	210	Physical Metallurgy	3	3	4
SOC	201	Sociology	3	0	3
			9	3	10
Ninth Quarter (Fall)					
MEC	205	Strength of Materials	5	0	5
PHY	103	Electricity	3	2	4
			8	2	9
Tenth Quarter (Winter)					
TDT	201	Tool Design I	2	6	4
MEC	235	Hydraulics and Pneumatics	3	3	4
			5	9	8
Eleventh Quarter (Spring)					
TDT	202	Tool Design II	2	6	4
DFT	220	Computer Aided Drafting	3	3	4
			5	9	8
Twelfth Quarter (Summer)					
TDT	203	Tool Design III	2	6	4
ENG	103	Report Writing	3	0	3
MEC	213	Machine Design	2	2	3
			7	8	10
Thirteenth Quarter (Fall)					
TDT	204	Tool Design IV	2	6	4
ENG	204	Oral Communication	3	0	3
MEC	206	Dynamics	3	0	3
			8	6	10
Fourteenth Quarter (Winter)					
TDT	210	Introduction to CNC and Robotic Applications	3	3	4
DFT	221	Advanced Computer Aided Drafting and Design	2	6	4
			5	9	8
		Program Totals	97	79	128

*MAT 103 Analytical Geometry and Calculus I may be substituted for MAT 204.

AIR CONDITIONING, HEATING, AND REFRIGERATION

Diploma

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
First Quarter (Fall)					
AHR 1121.1	Fundamentals of Refrigeration: Domestic	2	0	6	4
MAT 1101.1	Fundamentals of Mathematics	4	0	0	4
ELC 1117.1	Basic Electricity	2	2	0	3
		8	2	6	11
Second Quarter (Winter)					
AHR 1121.2	Fundamentals of Refrigeration: Domestic	1	0	6	3
BPR 1108	Basic Mechanical Blueprint Reading	1	2	0	2
MAT 1101.2	Fundamentals of Mathematics	1	0	0	1
MAT 1103	Geometry	3	0	0	3
		6	2	6	9
Third Quarter (Spring)					
AHR 1122.1	Fundamentals of Refrigeration: Commercial	2	0	6	4
BPR 1116	Blueprint Reading: Air Conditioning	2	2	0	3
WLD 1101	Basic Welding	1	2	0	2
		5	4	6	9
Fourth Quarter (Summer)					
AHR 1122.2	Fundamentals of Refrigeration: Commercial	1	0	6	3
ELC 1117.2	Basic Electricity	1	0	0	1
ELC 1118.1	Applied Electricity	1	0	0	1
PHY 1101	Applied Science I	3	2	0	4
		6	2	6	9
Fifth Quarter (Fall)					
AHR 1123.1	Principles of Air Conditioning	3	0	3	4
ENG 100	Reading Comprehension	1	2	0	2
PSY 206	Applied Psychology	3	0	0	3
		7	2	3	9

		Hrs. Per Week Class	Lab	Shop	Credit Hrs.
Sixth Quarter (Winter)					
AHR 1123.2	Principles of Air Conditioning	0	0	6	2
ELC 1118.2	Applied Electricity	2	2	0	3
ENG 1102	Communication Skills	3	0	0	3
		5	2	6	8
Seventh Quarter (Spring)					
AHR 1124	Principles of Heating: Fuels & Burners	2	0	6	4
AHR 1127	Duct Construction and Maintenance	2	0	6	4
		4	0	12	8
Eighth Quarter (Summer)					
AHR 1126	All Year Comfort Systems and A.C. Servicing	2	0	9	5
BUS 1103	Small Business Operations	3	0	0	3
		5	0	9	8
	Program Totals	46	14	54	71

AUTOMOTIVE MECHANICS

Diploma

		Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)					
AUT 1101.1	Internal Combustion Engines	4	0	3	5
MAT 1101	Fundamentals of Mathematics	5	0	0	5
		9	0	3	10
Second Quarter (Winter)					
AUT 1101.2	Internal Combustion Engines	2	0	6	4
BPR 1108	Basic Mechanical Blueprint Reading	1	2	0	2
ENG 100	Reading Comprehension	1	2	0	2
		4	4	6	8
Third Quarter (Spring)					
AUT 1102.1	Engine Electrical and Fuel Systems	5	0	3	6
PHY 1101.1	Applied Science I	2	2	0	3
		7	2	3	9

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
Fourth Quarter (Summer)					
AUT 1102.2	Engine Electrical and Fuel Systems	2	0	6	4
AUT 1121	Braking Systems	2	0	3	3
PHY 1101.2	Applied Science I	1	0	0	1
		5	0	9	8
Fifth Quarter (Fall)					
AUT 1123	Automotive Chassis and Suspension System	3	0	9	6
		3	0	9	6
Sixth Quarter (Winter)					
AUT 1124	Automotive Power Train Systems	4	0	6	6
WLD 1101	Basic Welding	1	2	0	2
		5	2	6	8
Seventh Quarter (Spring)					
AUT 1125.1	Automotive Servicing	3	0	3	4
AUT 1128	Automotive Air Conditioning	2	0	3	3
ENG 1102	Communication Skills	3	0	0	3
		8	0	6	10
Eighth Quarter (Summer)					
AUT 1125.2	Automotive Servicing	3	0	3	4
BUS 1103	Small Business Operations	3	0	0	3
(ECO 1107	Consumer Economics)	(3)	(0)	(0)	(3)
PSY 206	Applied Psychology	3	0	0	3
		9	0	3	10
	Program Totals	50	8	45	69

CARPENTRY AND CABINETMAKING

Diploma
(Sequence for Odd Years)

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
First Quarter (Fall)					
CAR 1101.1	Carpentry I	4	0	3	5
BPR 1107	Blueprint Reading-Construction Trades	1	2	0	2
MAT 1101.1	Fundamentals of Mathematics	4	0	0	4
		9	2	3	11

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
Second Quarter (Winter)					
CAR 1103.1	Carpentry II	3	0	6	5
BPR 1109	Blueprint Reading-Construction Trades	1	2	0	2
MAT 1101.2	Fundamentals of Mathematics	1	0	0	1
MAT 1103	Geometry	3	0	0	3
		8	2	6	11
Third Quarter (Spring)					
CAR 1103.2	Carpentry II	3	0	9	6
DFT 1127	Construction Trades-Drafting I	2	2	0	3
		5	2	9	9
Fourth Quarter (Summer)					
CAR 1105.1	Advanced Carpentry Projects	1	0	12	5
DFT 1128	Construction Trades-Drafting II	2	2	0	3
		3	2	12	8
Fifth Quarter (Fall)					
CAR 1101.2	Carpentry I	1	0	3	2
CAR 1102.1	Cabinetmaking I	3	0	9	6
		4	0	12	8
Sixth Quarter (Winter)					
CAR 1102.2	Cabinetmaking I	2	0	6	4
ENG 100	Reading Comprehension	1	2	0	2
PSY 206	Applied Psychology	3	0	0	3
		6	2	6	9
Seventh Quarter (Spring)					
CAR 1104	Cabinetmaking II	0	0	9	3
ENG 1102	Communication Skills	3	0	0	3
		3	0	9	6
Eighth Quarter (Summer)					
CAR 1105.2	Advanced Carpentry Projects	1	0	12	5
BUS 1103	Small Business Operations	3	0	0	3
		4	0	12	8
	Program Totals	42	10	69	70

CARPENTRY AND CABINETMAKING

Diploma
(Sequence for Even Years)

		Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)					
CAR 1102.1	Cabinetmaking I	3	0	9	6
BPR 1107	Blueprint Reading-Construction Trades	1	2	0	2
		4	2	9	8
Second Quarter (Winter)					
CAR 1102.2	Cabinetmaking I	2	0	6	4
ENG 100	Reading Comprehension	1	2	0	2
PSY 206	Applied Psychology	3	0	0	3
		6	2	6	9
Third Quarter (Spring)					
CAR 1104	Cabinetmaking II	0	0	9	3
ENG 1102	Communication Skills	3	0	0	3
		3	0	9	6
Fourth Quarter (Summer)					
CAR 1105.1	Advanced Carpentry Projects	1	0	12	5
BUS 1103	Small Business Operations	3	0	0	3
		4	0	12	8
Fifth Quarter (Fall)					
CAR 1101	Carpentry I	5	0	6	7
MAT 1101.1	Fundamentals of Mathematics	4	0	0	4
		9	0	6	11
Sixth Quarter (Winter)					
CAR 1103.1	Carpentry II	3	0	6	5
BPR 1109	Blueprint Reading-Construction Trades	1	2	0	2
MAT 1101.2	Fundamentals of Mathematics	1	0	0	1
MAT 1103	Geometry	3	0	0	3
		8	2	6	11

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
Seventh Quarter (SPring)					
CAR 1103.2	Carpentry II	3	0	9	6
DFT 1127	Construction Trades Drafting I	2	2	0	3
		5	2	9	9
Eighth Quarter (Summer)					
CAR 1105.2	Advanced Carpentry Projects	1	0	12	5
DFT 1128	Construction Trades-Drafting II	2	2	0	3
		3	2	12	8
	Program Totals	42	10	69	70

MACHINIST

Diploma

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
First Quarter (Fall)					
MES 1101.1	Machine Shop I	2	0	6	4
BPR 1104	Blueprint Reading: Mechanical	1	2	0	2
MAT 1101.1	Fundamentals of Mathematics	4	0	0	4
		7	2	6	10
Second Quarter (Winter)					
MES 1101.2	Machine Shop I	1	0	6	3
BPR 1105	Blueprint Reading: Mechanical	1	2	0	2
MAT 1101.2	Fundamentals of Mathematics	1	0	0	1
MAT 1103	Geometry	3	0	0	3
		6	2	6	9
Third Quarter (Spring)					
MES 1102.1	Machine Shop II	2	0	6	4
BPR 1106	Blueprint Reading: Mechanical	1	2	0	2
MAT 1104	Trigonometry	3	0	0	3
		6	2	6	9

		Hrs. Per Week Class	Lab	Shop	Credit Hrs.
Fourth Quarter (Summer)					
MES 1102.2	Machine Shop II	1	0	6	3
ENG 100	Reading Comprehension	1	2	0	2
MAT 1123	Machinist Mathematics	3	0	0	3
		5	2	6	8
Fifth Quarter (Fall)					
MES 1103.1	Machine Shop III	2	0	6	4
ENG 1102	Communication Skills	3	0	0	3
PSY 206	Applied Psychology	3	0	0	3
		8	0	6	10
Sixth Quarter (Winter)					
MES 1103.2	Machine Shop III	1	0	6	3
PHY 1100	Industrial Science	3	2	0	4
		4	2	6	7
Seventh Quarter (Spring)					
MES 1104.1	Machine Shop IV	2	0	6	4
BUS 1102	Small Business Operations	3	0	0	3
(ECO 1107	Consumer Economics)	(3)	(0)	(0)	(3)
WLD 1101	Basic Welding	1	2	0	2
		6	2	6	9
Eighth Quarter (Summer)					
MES 1104.2	Machine Shop IV	1	0	6	3
MES 1106	Introduction to Numerical Control Machines	3	3	0	4
MEC 1115	Treatment of Ferrous and Non-Ferrous Metals	1	0	3	2
		5	3	9	9
	Programs Totals	47	15	51	71

TOOL AND DIE MAKING*

Associate of Tool and Die-Technical Diploma
(Offered Even Years)

		Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)					
TDM 1201.1	Machine Processes	2	0	6	4
MAT 1203	Trigonometry	3	0	0	3
		5	0	6	7

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
Second Quarter (Winter)					
TDM 1201.2	Machine Processes	1	0	6	3
MAT 1204	Compound Angles and Curves	5	0	0	5
		6	0	6	8
Third Quarter (Spring)					
TDM 1202.1	Machine Processes	2	0	6	4
BPR 1208.1	Blue Print Reading: Tool & Die	1	0	0	1
DFT 1207	General Machine Drafting	2	4	0	4
		5	4	6	9
Fourth Quarter (Summer)					
TDM 1202.2	Machine Processes	1	0	6	3
BPR 1208.2	Blue Print Reading: Tool & Die	0	4	0	2
MEC 1203	Metallurgy	3	0	0	3
		4	4	6	8
Fifth Quarter (Fall)					
TDM 1204.1	Machine Processes	2	0	6	4
ELC 1201	Electricity - Industrial	2	2	0	3
MEC 1209	Hydraulics and Pneumatics	3	0	0	3
		7	2	6	10
Sixth Quarter (Winter)					
TDM 1204.2	Machine Processes	1	0	6	3
TDM 1205	Fundamentals of Mold Construction	3	2	0	4
		4	2	6	7
Seventh Quarter (Spring)					
TDM 1206.1	Machine Processes	2	0	6	4
TDM 1207	Special Problems & Molding	3	4	0	5
		5	4	6	9
Eighth Quarter (Summer)					
TDM 1206.2	Machine Processes	1	0	6	3
DFT 1209	Tool Design & Planning	2	4	0	4
		3	4	6	7
	Program Totals	39	20	48	65

*Students who have not completed the machinist curriculum must also take ENG 1102 and PSY 2206. Total program credit hours 71.

WELDING

Diploma

		Hrs. Per Week Class	Lab	Shop	Credit Hrs.
First Quarter (Fall)					
WLD 1120	Oxyacetylene Welding & Cutting	3	0	12	7
		3	0	12	7
Second Quarter (Winter)					
WLD 1121	Arc Welding	3	0	12	7
		3	0	12	7
Third Quarter (Spring)					
WLD 1122	Commercial & Industrial Practices	3	0	9	6
WLD 1123	Inert Gas Welding	1	0	3	2
		4	0	12	8
Fourth Quarter (Summer)					
WLD 1112	Mechanical Testing and Inspection	1	3	0	2
WLD 1124.1	Pipe Welding	2	0	6	4
BPR 1108	Basic Mechanical Blueprint Reading	1	2	0	2
		4	5	6	8
Fifth Quarter (Fall)					
WLD 1124.2	Pipe Welding	1	0	6	3
ENG 100	Reading Comprehension	1	2	0	2
MAT 1101.1	Fundamentals of Mathematics	4	0	0	4
		6	2	6	9
Sixth Quarter (Winter)					
WLD 1125	Certification Practices	3	0	6	5
MAT 1101.2	Fundamentals of Mathematics	1	0	0	1
MAT 1103	Geometry	3	0	0	3
MEC 1124	Metallurgy	3	0	0	3
		10	0	6	12

		Hrs. Per Week			Credit
		Class	Lab	Shop	Hrs.
Seventh Quarter (Spring)					
DFT 1126	Pattern Development and Layout	0	3	0	1
ELC 1119	Electricity for Welders	3	2	0	4
ENG 1102	Communication Skills	3	0	0	3
		6	5	0	8
Eighth Quarter (Summer)					
BUS 1103	Small Business Operations	3	0	0	3
(ECO 1107	Consumer Economics)	(3)	(0)	(0)	(3)
BPR 1117	Blueprint Reading: Welding	1	2	0	2
MES 1112	Machine Shop Processes	1	3	0	2
PSY 206	Applied Psychology	3	0	0	3
		8	5	0	10
	Program Totals	44	17	54	69

COURSE DESCRIPTION INDEX

COURSE DESCRIPTIONS

Please examine each course description before registering and determine if all prerequisites have been met. Prerequisites shown are those courses that must be successfully completed before attempting further study. In certain cases the department chairperson may waive some prerequisites.

**Proficiency examinations will not be available for courses marked with an asterisk because of the nature of the course and in some cases safety requirements in the use of equipment. Any exceptions must be with the approval of the department chairperson.*

AHE-213 Hazardous Materials and Disaster (2-2-0-3)

In this course students are exposed to a variety of problems and hazards encountered by emergency services personnel. Chemical poisons, both airborne and contact, are studied. Management of complex emergency situations and a study of disaster experience are included. Prerequisite: Departmental Approval.

AHE-215 EMS Personnel Management (5-0-0-5)

This course explores the problems of management in the EMS system. Basic principles of supervision and management organization are presented. The structure and function of municipal governments, EMS grantsmanship, regulatory agencies, systems management, legal and other topics relevant to the EMS manager are discussed. Problems of manpower and training are also included. Prerequisite: PSY 101, Departmental Approval.

AHE-216 Fundamentals of Public Safety (3-2-0-4)

This course introduces the student to the roles of the various public safety personnel. Interaction between EMS and other public safety agencies is stressed. Emphasis is given to the basic practices of fire services personnel. Prerequisite: Departmental Approval.

AHR-1121 Fundamentals of Refrigeration: Domestic (3-0-12-7)

Terminology, laws of refrigeration, absolute pressure, and absolute temperature, energy conversion units, specific heat, latent heat, and sensible heat; measurement of heat in quantity and intensity; ton of refrigeration, pressure temperature relationships, transfer of heat by conduction, convection, and radiation; elementary refrigeration, refrigeration cycle and domestic refrigeration circuits and controls. Tools, materials, and methods applicable to refrigeration; bending,and joining tubing. Safety practices will be stressed. Emphasis will be placed on domestic equipment because of its basic nature. Prerequisite: None.

AHR-1122 Fundamentals of Refrigeration: Commercial (3-0-12-7)

Commercial refrigeration installation and servicing of display cabinets, walk in coolers and freezer units and mobile refrigeration systems are studied. Catalogs are used to calculate heat loads, sizing, and matching system components and to study circuits and controls, refrigerants, oils, and methods. The American Standard Safety Code for refrigeration is studied and its principles practiced. Prerequisite: AHR 1121.

AHR-1123 Principles of Air Conditioning (3-0-9-6)

Work includes the selection of various heating, cooling, and ventilating systems, investigation and control of factors affecting air cleaning, movements, temperature, and humidity. Use is made of the psychrometric chart and sling psychrometer in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Heating and cooling loads are estimated and duct pressures are studied. Circuit and controls,both electric and pneumatic, are applied to heating and cooling. Practical sizing and balancing of duct work is performed as needed. Prerequisite: AHR 1122.

AHR-1124 Principles of Heating: Fuels and Burners (2-0-6-4)

Fuels and burners used in supplying heat for various types of heating systems—coal, oil, natural gas, manufactured gas, liquified petroleum gas, and electricity. Experiments in equipment selection, installation, adjustments and servicing will be conducted. Warm air systems, heat emitter, electric heating, forced hot water and steam heating systems, including selection and sizing of equipment—registers, grills furnaces, boilers, radiators, baseboards, piping, and ducts. Heating layout and specifications for an existing structure or one in blueprint stage will be prepared. Prerequisite: AHR 1123.

AHR-1126 All Year Comfort Systems and A.C. Servicing (2-0-9-5)

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification, dehumidification, temperature control, and distribution of air in conditioned spaces. Installation of various ducts and lines needed to connect various components is made. Shop work involves circuit and controls, testing, and adjusting of air conditioning and refrigeration equipment, and locating and correction of equipment failure. Prerequisite: AHR 1124.

AHR-1127 Duct Construction and Maintenance (2-0-6-4)

Study of various duct materials including sheet steel, aluminum, fiber glass, and plastic. Safety, sheet metal hand tools, cutting and shaping machines, fasteners and fabrication practices, layout methods, and development of duct systems. The student will study and service various duct systems and perform repairs including ducts made of fiber glass. A study is made of duct fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation and ventilating hoods. Prerequisites: DFT 1116, AHR 1123, Corequisite: AHR 1126.

AUT-1101 Internal Combustion Engine (6-0-9-9)

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performance; servicing and maintenance of engine block, crankshaft, pistons, valves, cams and camshafts, fuel and exhaust systems; cooling systems; proper lubrication; and methods of testing, diagnosing and repairing. Prerequisite: None.

AUT-1102 Engine Electrical and Fuel System (7-0-9-10)

A thorough study of the electrical and fuel systems of the automobile. Battery, cranking mechanism, charging systems (both internal and external regulators), ignitions systems (a thorough coverage of both the conventional and HEI systems), accessories and wiring, fuel pumps, carburetors and fuel infection systems. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system including the pollution devices. Prerequisite: AUT 1101.

AUT-1121 Braking Systems (2-0-3-3)

A complete study of various braking systems employed on automobiles and light-weight trucks. Emphasis is placed on how they operate, proper adjustment, and repair. Prerequisite: PHY 1101.

AUT-1123 Automotive Chassis and Suspension Systems (3-0-9-6)

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be McPherson struts, springs, steering systems (conventional and rack and pinion), steering linkage, shock absorbers, and wheel alignment on rear wheel and front wheel drive vehicles. Prerequisite: PHY 1101.

AUT-1124 Automotive Power Train Systems (4-0-6-6)

Principles and functions of automotive power train systems; clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair. Prerequisites: PHY 1102, AUT 1123.

AUT-1125 Automotive Servicing **(6-0-6-8)**

Emphasis is on the shop procedures necessary in determining the nature of trouble developed in the various component systems of the automobile. Trouble-shooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing. Prerequisites: AUT 1123, AUT 1121, AUT 1128.

AUT-1128 Automotive Air Conditioning **(2-0-3-3)**

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1102.

BIO-101 Human Anatomy and Physiology I **(4-3-5)**

A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systematic processes in the development of basic physiological principles. Prerequisites: None.

BIO-102 Human Anatomy and Physiology II **(4-3-5)**

A continuation of BIO 101. Prerequisite: BIO 101.

BIO-103 Microbiology **(4-3-5)**

This is a study of microorganisms, pathogenic and non-pathogenic, their relation to disease, community problems and implications for proper health techniques. Prerequisite: None.

BIO-107 Anatomy and Physiology I **(4-0-0-4)**

A study of the structure and functions of the human body with cellular and topographic emphasis relating to the field of Radiologic Technology. Prerequisites: None.

BIO-108 Anatomy and Physiology II **(4-0-0-4)**

A continuation of BIO 107. Prerequisites: BIO 107.

BIO-111 Basic Life Sciences **(5-0-0-5)**

A study of the normal structure and function of the human body. Elementary principles and concepts of chemistry and microbiology are included. Prerequisite: None.

BIO-1109 Biomedical Sciences **(4-2-0-5)**

This course covers the basic fundamentals and principles of anatomy and physiology, microbiology and nutrition, providing a foundation for certain dental science courses. Prerequisite: None.

BPR-111 Blueprint Reading **(1-2-2)**

A basic study in the reading and interpretation of mechanical blueprints. Included will be a study of lines, views, dimensioning, notes and basic sketching. Prerequisite: None.

BPR-1104 Blueprint Reading: Mechanical **(1-2-0-2)**

Interpretation and reading the blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.

BPR-1105 Blueprint Reading: Mechanical **(1-2-0-2)**

Further practice of interpretation of blueprints as they are used in the industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes. Prerequisite: BPR 1104.

BPR-1106 Blueprint Reading: Mechanical **(1-2-0-2)**

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly. Prerequisite: BPR 1105.

BPR-1107 Blueprint Reading: Construction Trades **(1-2-0-2)**

How to read pictorial and orthographic drawings. Reading elevations, floor plans, symbols, notes, scales, construction types, interior and exterior details as related to a set of working drawings for a residence. Prerequisite: None.

BPR-1108 Basic Mechanical Blueprint Reading (1-2-0-2)

This course is designed to give the student an understanding of Industrial Blueprints. Emphasis will be placed on the study of basic lines, views, dimensions, notes symbols, and industrial practice as related to the reading and interpreting of drawings. Prerequisite: None.

BPR-1109 Blueprint Reading: Construction Trades (1-2-0-2)

Advanced reading of design variations, construction materials, practices, planning, general construction specifications and heavy construction. Prerequisite: BPR 1107.

BPR-1116 Blueprint Reading: Air Conditioning (2-2-0-3)

Reading of working prints, exploded drawings, wiring schematics, equipment layouts, shop sketches, building codes, heat systems, standards and symbols. Prerequisite: BPR 1108.

BPR-1117 Blueprint Reading: Welding (1-2-0-2)

A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications. Prerequisite: BPR 1108.

***BPR-1208 Blueprint Reading: Tool and Die (1-4-0-3)**

A complete and thorough knowledge of tool and die prints will be required. Industrial prints will be used in this course. The difference between production drawings or operation sheets and tools drawing will be presented. Assembly drawings as the piece fits into place will be broken down into each detail print required. Prerequisite: DFT 1207.

BUS-100 Contemporary Business (3-0-3)

A study of business as the activating element in an enterprise system striving to achieve a combination of human, material, and capital resources to satisfy the needs and wants of people. An introduction to business from the professional (as opposed to the consumer) viewpoint. Prerequisite: None.

BUS-101 Introduction to Business (3-0-3)

A survey of the business world with particular attention devoted to the structure of the various types of business organizations, methods of financing, internal organization, and management. Prerequisite: None.

BUS-110 Business Machines (1-2-2)

A general survey of business and office machines. Students will receive training in techniques, processes, operation and application of electronic (ten-key display and printer) calculators. Prerequisite: None.

BUS-114 Business Law (5-0-5)

A survey course designed to acquaint the student with certain fundamentals and principles of business law, including general contracts, bailments, sales contracts, commercial paper, agency employer and employee relations with UCC applications. Prerequisite: None.

BUS-115 Business Law (3-0-3)

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies. The uniform commercial code is considered whenever applicable. Includes the study of laws pertaining to bailments; insurance; agency; employer and employee relations, business organization; real property, and workers benefits. Prerequisite: None.

BUS-117 Clerical Accounting I (5-2-6)

Basic accounting theory and applications are presented through the sequential steps of the accounting cycle. The accounting data are collected from source documents, the causative business transactions are analyzed, and the financial information is recorded and summarized. Computer processing of accounting data is introduced. Prerequisite: None.

BUS-118 Clerical Accounting II (5-2-6)

The processing of information involving transactions of a similar nature is studied as accounting subsystems. The cash receipts and payments and sales and purchases subsystems are given extensive practical emphasis in direct-entry, double-entry, and computer data processing formats. Prerequisite: BUS 117 or BUS 120.

BUS-120 Accounting I **(3-2-4)**

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: None.

BUS-121 Accounting II **(3-2-4)**

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. Prerequisite: BUS 120.

BUS-122 Accounting III **(3-2-4)**

The student is given a thorough knowledge of concepts used in the preparation and interpretation of financial statements. Each item of the income statement and balance sheet is carefully analyzed prior to making a selection as to how these items will be utilized. Prerequisite: BUS 121.

BUS-123 Finance I **(5-0-5)**

Stockmarket transaction and brokerage operations are used as a vehicle in presenting this course. Financing of business units includes individuals, partnerships, corporations, and trusts. Sources and uses of capital are covered. Prerequisites: BUS 121, MAT 112.

BUS-125 Introduction to Banking Fundamentals **(4-0-4)**

The study and application of bank fundamentals. Emphasizes current trends in philosophy and position of management. Prerequisite: None.

BUS-140 Accounting Concepts for Manufacturing/Industry **(3-2-4)**

The rules of double-entry accrual accounting as related to the balance sheet equation are stressed. Emphasis on terminology for the elements of an accounting system and alternative methods of recording data is presented. Construction and interpretation of financial statements and other accounting reports are included. This course will also cover Engineering Economy. Prerequisite: None.

BUS-164 Real Estate Law **(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-165 Real Estate Brokerage Operations **(3-0-3)**

This is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses to qualify for the State Broker's Exam. Topics covered include real estate brokerage, closing procedures, contracts, and trust account guidelines. Prerequisite: BUS 296.

BUS-206 Banking and Finance Credit **(3-2-4)**

The techniques of installment lending are presented. Emphasis is placed on establishing the credit, obtaining and checking information, servicing and loan, and collecting the amounts due. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. Prerequisite: BUS 121.

BUS-207 Principles of Bank Operations **(5-0-5)**

The economic importance of banks; the receiving function, processing of cash items, bookkeeping operations, posting system, legal relationships with depositors, internal controls, trust services, growth of the American banking system, banking and public service. Prerequisite: BUS 120.

BUS-208 Financial Statements Analysis **(5-0-5)**

A study of analytical procedures utilized in evaluating solvency and profitability of businesses. Horizontal and vertical analysis of comparative statements are examined in the light of general economic conditions and conditions unique to the businesses being evaluated. Prerequisite: Department Permission.

BUS-209 Real Estate Finance **(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-222 Control Accounting **(3-2-4)**

An introductory study of accounting for departmental operations, cost systems, and budgetary controls. This course is for the non-accounting student. The student will gain an understanding of basic decentralized operations, absorption of costs, and the nature and objectives of standards and budgeting. Prerequisite: BUS 121 or BUS 140.

BUS-223 Intermediate Accounting **(5-0-5)**

A general investigation of the accounting principles, concepts, and procedures underlying the preparation of financial statements followed by an in-depth analysis of financial statements and managerial implications as they are derived from accounting data. Prerequisite: BUS 122.

BUS-225 Cost Accounting I **(5-0-5)**

Nature and purpose of cost accounting, accounting for direct labor, materials, and factory overhead; for job order and process cost systems. Prerequisite: BUS 121.

BUS-226 Cost Accounting II **(3-2-4)**

A study of standard cost procedures; selling, administrative and distribution costs; budgeting and management use of cost data. Prerequisite: BUS 225.

BUS-229 Taxes I **(3-2-4)**

A study of federal and state personal income taxes, payroll taxes, sales and use taxes. Prerequisite: BUS 121 or HMA 106.

BUS-230 Taxes II **(3-2-4)**

A study of federal and state partnership and corporate income taxes. Prerequisite: BUS 229.

BUS-231 Government and Business **(3-0-3)**

A discussion of the extent to which government regulates business and the economy along with the implications and problems with which students, as citizens and voters, must be familiar. Covered are such regulations as Interstate Commerce Act, Sherman Act, Clayton Act, Pure Food and Drug Act, The Federal Fair Labor Standards Act, and the National Labor Relations Act. Prerequisite: ECO 105.

BUS-233 Personnel Management and Supervision **(3-0-3)**

This course presents the fundamental principles and successful practices in the organization and supervision of employees. A study of critically important and practical concepts of modern day supervision is presented. Results of modern social-psyhcological research and case studies are employed to demonstrate and emphasize leadership and motivation in the job situation. Prerequisite: None.

BUS-234 Introduction to Management **(3-2-4)**

The student is given a thorough introduction to basic theories of management and techniques of applying these in a real situation. Prerequisite: None.

BUS-235 Business Organization & Management **(3-2-4)**

Principles of business organization, administration and management covering management theory including planning, staffing, controlling, coordinating, directing, financing, and budgeting. An overview of developing and engineering the product, methods analysis and control, principles and administration of industrial relations and financing controls as interrelated functions of management are stressed. Prerequisite: BUS 101.

BUS-236 Small Business Management **(3-0-3)**

A study of the principles of management as they relate to small businesses. The problems of small businesses will be stressed along with the possible solutions and how to alleviate the most common causes of business failures. Prerequisite: None.

BUS-237 Advertising **(5-0-5)**

A study of the role of advertising in the American economy, considering the importance in the business operations with resulting profits and business success. The instructions in the techniques of advertising and display. Prerequisite: BUS 239.

BUS-238 Consumer Behavior **(5-0-5)**

An examination of motivational and behavioral approaches to understanding consumer behavior in buying goods and services and the business-management problems relating to buyer decisions. Prerequisite: BUS 239.

BUS-239 Introduction to Marketing **(3-2-4)**

A general survey of the field of marketing, with a detailed study of the function, policies, and institutions involved in the marketing process. Prerequisite: None.

BUS-240 Channels of Distribution **(5-0-5)**

A study of the characteristics, economic aspects, regulations, services, and problems relating to systems of physical distribution. Prerequisite: BUS 239.

BUS-241 Retailing **(3-0-3)**

A study of the role of retailing in the economy including development of and changes occurring in the retail structure, functions performed including merchandise controls and inventory records, principles governing effective operation and managerial problems resulting from current economic and social trends. Prerequisite: BUS 239.

BUS-242 Money and Banking **(5-0-5)**

An indepth look at money and the world of banking that creates it and through which it flows. Examined are the tools of monetary and fiscal policy, the impact of monetary policy on the banking system, and monetary theory. Trends in banking as it moves into the twenty-first century and international banking are also addressed. Prerequisite: None.

BUS-246 Postal Employee Services **(3-0-3)**

This course involves the actual functions of the Personnel Office in relation to the services it provides for postal employees. Course content includes the policies and practices concerning selection, placement, training, and promotion of employees. Also covered are self-development training programs, EEO practices, insurance and retirement benefits, awards programs, salary schedules, and safety and health. Prerequisite: None.

BUS-247 Insurance **(5-0-5)**

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included. Prerequisite: BUS 114 or HMA 207.

BUS-248 Marketing Research **(3-2-4)**

A study of the role of Marketing Research in the American economy to include techniques for maximizing performance within marketing channels. Prerequisite: BUS 239.

BUS-249 Inventory Control **(3-0-3)**

A study of acquisition, control and distribution of inventories to include: ordering, control, and distribution techniques which may prove profitable in a marketing venture. Prerequisite: BUS 121.

BUS-250 Postal Problems Analysis **(3-0-3)**

Situation analysis, problem analysis, decision analysis, consequence analysis, and solution analysis are applied to Postal Service problems. Problems related to personnel selection and evaluation, job classifications, communication, automation, and costs are explored. Prerequisite: BUS 246.

BUS-251 Postal History and Organization **(3-0-3)**

Postal developments from ancient civilizations to the Reorganization Act of 1970 and today. Prerequisites: None.

BUS-252 Mail Processing I **(3-0-3)**

Fundamentals of processing mail, including classes and priorities of mail, casing and separation, layout of equipment, receipt of mail and service standards. Retailing postal products and services. Prerequisites: None.

BUS-255 Postal Employee **(3-0-3)**

Personnel administration, employee benefits and programs. Prerequisites: None.

BUS-256 Postal Labor Relations **(3-0-3)**

Brief history of the labor movement, postal unions, administration of the National Agreements. Prerequisites: None.

BUS-257 Postal Rural Delivery **(3-0-3)**

Principles of delivery, route inspections and adjustments, types of routes, mail counts, duties and responsibilities. Prerequisites: None.

BUS-258 Postal City Delivery & Collection **(3-0-3)**

Collection schedules, methods of delivery, route adjustments and inspections. Prerequisites: None.

BUS-259 Postal Finance **(3-0-3)**

Postal accounting, audit and budget procedures. Prerequisites: None.

BUS-266 Professional Sales Techniques **(3-0-3)**

A study of the fundamentals of salesmanship in retail, wholesale, and specialty selling. Theory techniques in selling and practice demonstrations will be utilized. Emphasis will be placed on prospecting for sales, planning selling strategies, sales presentation and closing techniques. Prerequisite: BUS 239.

BUS-269 Auditing **(5-0-5)**

Principles of conducting audits both internal and external, with special emphasis on the control and safeguarding of assets and properly recording liabilities. Prerequisite: BUS 223.

BUS-296 Real Estate Fundamentals for Salespersons **(6-0-6)**

An introductory-level course in real estate practices and principles, basic real estate law, finance, construction, and the role of government in real estate. This course is designed to provide the student with the information necessary to qualify for the "North Carolina Real Estate Salesman's Exam." Prerequisite: None.

BUS-1103 Small Business Operations **(3-0-0-3)**

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations. Prerequisite: None.

CAR-1101 Carpentry I **(5-0-6-7)**

This course will be presented as an introduction to the first steps in site analysis and site preparation. Foundation layout and estimates of needed materials will be taught. Overall planning of job will be presented for consideration. Size, identification and proper use of nails will be studied. Prerequisite: None.

CAR-1102 Cabinetmaking I **(5-0-15-10)**

This course is designed to introduce the student to hand and power tools used in a cabinet shop. Various projects will be undertaken to develop the student's skills in the use of these tools. Identification and use of domestic woods will be stressed. Use of proper fasteners is studied. Prerequisite: None.

CAR-1103 Carpentry II **(6-0-15-11)**

In this course the student will study several types of roof construction. Each student will be required to layout, cut and assemble rafters and trusses. Students will study the rafter square in order to calculate the lengths and cuts of rafters and truss parts. Stair layout and construction will be considered in detail. Prerequisite: CAR 1101.

CAR-1104 Cabinetmaking II **(0-0-9-3)**

Cabinet layout and details are stressed. Installation of cabinets and built-ins is presented. Uses of plastic laminates will be taught. Prerequisite: CAR 1102.

CAR-1105 Advanced Carpentry Projects **(2-0-24-10)**

Live projects will acquaint the student with "hands-on" experience in framing and finish work. Quality workmanship will be emphasized. Each student will be given the opportunity to gain expertise in the use of carpentry tools. Prerequisite: CAR-1101, CAR-1103.

CHM-100 Introduction to Chemistry **(3-3-4)**

For students who need additional work in General Chemistry. An introduction to General Chemistry which is essential for understanding organic and biological chemistry. Laboratory work emphasizes these basic concepts. Prerequisite: None.

CHM-101 Fundamentals of Physiological Chemistry **(3-2-4)**

Emphasis is placed on physiological aspects of inorganic chemistry, organic chemistry, and biochemistry. Theoretic topics are dealt with briefly as an aid to understanding bodily processes. Prerequisite: CHM 100 or High School Chemistry.

CHM-102 Engineering Chemistry **(2-2-3)**

Chemical principles related to the Engineering Technology student will be emphasized. This includes the chemistry of elements and compounds and their relationship to the engineering field. Matter, energy, chemical reactions, water and air pollution are also included. Prerequisite: None.

CHM-103 MLT Chemistry I **(3-2-4)**

This course involves basic chemical principles needed for understanding atomic structure, solution concentrations, chemical reactions, acids, bases, salts, weights and measurements. Prerequisites: Admission to MLT program.

CHM-104 MLT Chemistry II **(3-2-4)**

This is a study of application of physiological chemistry in relation to diagnosis in the laboratory. Prerequisite: CHM 103.

CHM-111 General Chemistry **(3-4-5)**

An introductory chemistry course involving chemical terminology, atomic structure, properties of some elements, and the function of the periodic table. Properties of compounds and mixtures are studied as are types of chemical reactions. Laboratory work consists of various inorganic reactions and preparations. Corequisite: MAT 100.

CHM-112 General Chemistry **(3-4-5)**

This course involves a study of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, chemical combinations, weights and measurements. Prerequisite: CHM 111.

CHM-113 General Chemistry **(3-4-5)**

A study of properties of elements not covered in CHM 112 and a study in greater depth of the combining properties of the elements including equivalent weights. Laboratory work includes chemical reactions and an investigation of properties of solutions. Prerequisite: CHM 112.

CHM-121 Qualitative Analysis **(3-6-5)**

Qualitative analysis is the branch of analytical chemistry which determines the presence or absence of elements, radicals, or ions in an unknown substance or mixture of substances. Students will be expected to analyze and study unknown substances to determine which ions are present. Anaytical operations, the system of analysis, principles of qualitative analysis, analysis for anions, analysis for cations, analysis of alloys, salts, and commercial substances constitute major areas of study. Corequisite: CHM 113.

CHM-222 Quantitative Chemical Analysis **(3-6-5)**

Emphasis is placed on developing laboratory techniques employed in the volumetric analysis of acids and bases. The students will become thoroughly familiar with the principles and procedures of neutralization titration. Classroom work will emphasize the stoichiometric calculations involved in interpreting the results of analysis. Laboratory work will consist of percentage analysis of selected substances. Prerequisite: CHM 121.

***CHM-223 Quantitative Chemical Analysis** **(2-9-5)**

The more complex types of quantitative analysis. Special emphasis on the theory of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduced and use of modern analytical devices is stressed. The student will become familiar with the principles of redox reaction, ionization constants and pH of solutions. Stress is placed on the stoichiometric calculations of quantitative chemical analysis. Classroom work complements quantitative determinations in the laboratory. Prerequisite: CHM 222.

CHM-231 Organic Chemistry **(3-6-5)**

Nomenclature, structure, preparation, properties, and reactions of aliphatic organic compounds. Laboratory work will emphasize techniques. Corequisite: CHM 223.

CHM-232 Organic Chemistry **(3-6-5)**

The nomenclature, structure preparation, properties, and reactions of aromatic organic compounds. Laboratory work emphasizes techniques and involves preparation and analysis of selected organic compounds. Prerequisite: CHM 231.

***CHM-241 Industrial Chemical Analysis** **(3-9-6)**

An industrial laboratory situation is simulated. Principles and techniques learned in previous quarters are utilized in solution of problems common to local industry. It will be the responsibility of the instructor to determine and submit in outline form a program of suitable scope and sequence of topics which he will work out from consultation with his local advisory committee, representing the industry. Prerequisites: CHM 223, CHM 231.

***CHM-242 Industrial Chemical Analysis** **(3-9-6)**

An industrial laboratory situation is maintained and the emphasis on instrumentation is expanded. Problems of industrial quality control. Plant visitations. Prerequisite: CHM 241.

CHM-244 Environmental Chemistry **(3-2-4)**

This study is intended to demonstrate the existence of a deep, underlying core of principles to which all aspects of environmental science can contribute and from which each can draw. Our aim is to shift the emphasis toward an integrated consideration of five fundamental categories of variables: energy, matter, space, time and diversity. Efficiency of energy transfer in systems will be of major importance. Finally, many practical problems in environmental science are reaching crisis dimensions for all of mankind, and the attention of our most talented youth should be directed to them. Prerequisite: CHM 113.

CIV-100 Surveying Overview **(1-3-2)**

Discussions on map making and use (plats, contour, and topo); types of surveys; surveying methods; and deed work. Measurements of distances, angles, bearing, and elevations with surveying equipment. Prerequisite: None.

CIV-101 Surveying I **(2-6-4)**

Theory and practice of plane surveying; measuring distances, differential and profile leveling, compass work, transit, stadia and transit-tape surveys. Prerequisite: MAT 101.

CIV-102 Surveying II **(2-6-4)**

Triangulation of ordinary precision; stadia and plane table; calculation of areas of land; cross sections, slope stakes, earth work computations, and mass diagrams; land surveying, topo and mapping. Prerequisite: CIV 101.

CIV-103 Route Surveying **(2-6-4)**

Route surveys; simple, compound, reverse, parabolic and spiral curves; geometric design of highways; highway surveys and plans. Prerequisite: CIV 101.

CIV-114 Statics **(5-0-5)**

Forces, and types of force systems; moments equilibrium of couples forces by analytical methods; static friction. Prerequisite: MAT 102 and PHY 102.

CIV-202 Properties of Soils **(2-2-3)**

Study of soil types and their physical properties; sampling and testing of soils; subsurface investigation; bearing capacity; stability of slopes; ground water; methods of compaction and consolidation. Prerequisite: CIV 220, CHM 102.

CIV-204 Surveying III **(2-6-4)**

Boundary photogrammetry; building and road construction surveying; application of advanced surveying techniques and instruments. Astronomical observations; law; S.I.T. exam review. Prerequisite: CIV 102, CIV 103, and DFT 104.

CIV-216 Strength of Materials **(5-0-5)**

Fundamental stress and strain relationship; centroids and moments of inertia; torsion, shear and bending moments; stresses and deflection in beams; columns and combined stresses; analysis of connections. Prerequisite: CIV 114.

CIV-217 Construction Methods and Equipment **(4-4-6)**

Construction and engineering orientation; field trips to construction projects; construction techniques, equipment, and materials; construction business practices; engineering fundamentals. Corequisite: MAT 101.

CIV-218 Properties of Plain Portland Concrete **(2-2-3)**

Study and testing of the composition and properties of portland concrete including cementing agents, aggregates, admixtures, and air-entertainment; design and proportioning of concrete mixes to obtain pre-determined strengths and properties; methods of placing, consolidating and curing concrete; standard control tests of concrete. Prerequisite: CIV 220. Corequisite: CHM 102.

CIV-219 Steel and Timber Construction **(4-4-6)**

Analysis and basic design of steel beams, tension members, columns, and (riveted, high strength bolted and welded) connections; study of plate girders, industrial building roofs, continuous spans, lightweight steel construction; use of American Institute of Steel Construction Manual. Design of timber members and their connections. Prerequisite: CIV 216.

CIV-220 Construction Planning **(4-0-4)**

Analysis of construction plant layout requirements and contractor's organization for building and highway projects. Construction scheduling; project control and supervision; coordinating trades on building construction. Operation, charts and practical application of Critical Path methods (CPM) for construction planning, scheduling, and "time-cost" determination. Prerequisite: CIV 217.

CIV-221 Asphalt **(2-2-3)**

Study and testing of asphaltic materials, asphalt pavements and surface treatments. Study will include properties, testing, production, laydown, and design of asphalt. Prerequisites: CIV 220 and CHM 102.

CIV-224 Reinforced Portland Concrete **(2-2-3)**

Analysis and design of reinforced concrete structural members; principles of prestressed and precast concrete. Prerequisite: CIV 216, CIV 218.

CIV-225 Estimates, Codes and Specifications **(4-4-6)**

Interpretation of working drawings of timber, steel, and reinforced concrete structures and highways; bidding procedures from preliminary survey to final bid; study of the North Carolina Building Code; pratical costs and estimates problems; specifications. Prerequisite: CIV 218, CIV 202, CIV 221, CIV 102, and DFT 104.

CIV-228 Contracts, Engineering Relations and Ethics **(2-2-3)**

Study of the Engineers' Codes, contracts, and business law. Ethical relations with employer, employees, clients, other technicians. Class discussions of situations involving engineering law and ethics. Prerequisite: Senior status.

CIV-229 Branches of Civil Engineering Technology **(3-3-4)**

Study of hydraulics, hydrology, water and sewage treatment. Field trips. Prerequisite: Senior status, CIV 202, CHM 102, and MAT 102.

CJC-101 Introduction to Criminal Justice **(5-0-5)**

This course is designed to provide the student with a philosophy of criminal justice with its legal limitations in our society and the primary responsibilities of the various agencies of the criminal justice system. The basic processes of criminal justice are discussed. The student receives an orientation relative to job opportunities. Prerequisite: None.

CJC-102 Introduction to Criminology **(5-0-5)**

A general course designed to introduce the student to the cusation of crime and criminal deviant behavior. The course presents the problem of crime historically and the aspects of contemporary efforts to meet the social problems caused by criminal behavior. Prerequisite: None.

CJC-105 Introduction to Correction **(4-0-4)**

Course examines the functional position of American corrections in the criminal justice system; the interrelationship of correction with the police and the courts. The history of corrections is considered as a societal response to deviance. Emphasis is given to the functioning of corrections as part of the criminal justice system and the need for cooperation between the various facets of the system. Court and institutional administration and the legal rights of inmates are covered. Prerequisite: None.

CJC-106 Probation and Parole **(3-0-3)**

Institutional and non-institutional treatment of the offender considering modern philosophy and methods in treatment of adult criminals and juvenile delinquents in correctional institutions. Probation as a judicial process and parole as an executive function are examined, and community-based correctional programs and the use of pardon are studied. Prerequisite: None.

CJC-107 Police Liability **(3-0-3)**

Theoretical and practical liability problems facing criminal justice practitioners and administrators. Emphasis centering on deadly force, excessive force, and nonlethal weapons. General policy and procedure development to include certification, training and restrictive use of special police equipment. Pursuit liability and off-duty problems will be included in discussion. Prerequisite: None.

CJC-110 Introduction to Juvenile Justice **(5-0-5)**

A general survey of juvenile behavior considers individual and social problems; theories of delinquency causation, and methods of prevention and correction. The course presents a general overview of the Juvenile Court and the system of juvenile justice. Prerequisite: None.

CJC-111 Defense Tactics **(1-2-2)**

This course presents the police role in physical arrests as a defensive role. The philosophy behind a defensive role will be discussed. Proper attitude, physical conditioning, and self-discipline will be emphasized. The student will be given instruction and practical application in arrest techniques, searches, control holds, and handcuffing. Prerequisite: None.

CJC-112 Legal Research **(5-0-5)**

This course is designed to aid the student in legal research. Special attention will be placed on recent North Carolina and United States Supreme Court decisions that have major implications on the three components of the criminal justice system: police, courts, and corrections. Students will research cases and document findings for classroom presentation. Prerequisite: CJC 101.

CJC-115 Criminal Law I **(3-0-3)**

A course designed to present the concepts of criminal law and to provide a legal groundwork for those who seek to enter the criminal justice field. Prerequisite: None.

CJC-116 Criminal Justice Internship **(0-10-1)**

Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. Prerequisite: Permission of the department chairperson.

CJC-117 Criminal Justice Internship **(0-10-1)**

A continuation of CJC 116. Prerequisite: CJC 116.

CJC-118 Criminal Justice Internship **(0-10-1)**

A continuation of CJC 117. Prerequisite: CJC 117.

CJC-125 Judicial Process **(4-0-4)**

This course provides the student with a review of court systems, procedures from incident to final disposition, principles of constitutional, federal, state, and civil laws as they apply to and affect law enforcement. Prerequisite: CJC 101.

CJC-200 Crime Prevention **(3-0-3)**

This course is designed to make the student aware of the many opportunities for lawbreaking open to the potential criminal. Various types of preventive securities such as locks, lighting, alarms, neighborhood watch programs, public presentations on crime prevention to interested groups by the students, etc., will be studied. Prerequisite: None.

CJC-201 Motor Vehicle Law **(3-0-3)**

A study of the traffic enforcement codes with primary emphasis placed on North Carolina Law as it relates to motor vehicles. Prerequisite: None.

CJC-202 Traffic Planning and Management **(3-2-4)**

This study covers the topic of traffic management and enforcement giving an overview of problems as they exist today. Attention is given to legislation, organization of the traffic unit, responsibilities to the traffic function of the various units within the law enforcement agency, enforcement tactics, evaluation of the traffic program effectiveness, and allocation of personnel and materials. Accident investigation is stressed. Prerequisite: None.

CJC-205 Criminal Evidence **(4-0-4)**

The kinds of legal evidence and the rules governing the admissibility of evidence in courts are explored in this course. Rules of evidence that apply in civil, criminal, and federal courts are discussed. Topics include: the hearsay rule, dying declarations, privileged communications, and the concepts of relevancy, competency and materiality. Prerequisite: CJC 101.

CJC-206 Community Relations **(3-0-3)**

This course provides the student with an understanding of community structure as they relate to minority groups, peer groups, socioeconomic groups, leader groups, and group relations. Emphasis is on the organization and function of these groups as they relate to the profession of criminal justice-protective service. Prerequisite: None.

CJC-210 Criminal Investigation I **(4-0-4)**

This course introduces the student to fundamentals of investigation, crime scene search, recording, collection and preservation of evidence. Sources of information, interview and interrogation, case preparation, and court presentation will be discussed. Prerequisite: Permission of Department Chairperson.

CJC-211 Introduction to Criminalistics **(4-2-5)**

A general survey of criminal investigation includes the methods and techniques used in modern scientific investigation of crime, with emphasis of the practical use of these modern methods by the student. Laboratory techniques will be demonstrated and the student will use the scientific laboratory equipment. Prerequisite: CJC 210.

CJC-212 Narcotics, Drugs, and Human Behavior **(3-2-4)**

This course familarizes the student with North Carolina drug laws and introduces the identification and classification of dangerous drugs. Emphasis is on the various effects that the different drugs have on the human body and in the temperament of individuals. Prerequisite: Permission of Department Chairperson.

CJC-213 Criminal Investigation II **(4-0-4)**

This is a continuation of CJC 109 with emphasis on specific offenses such as homicide, burglary, robbery, larceny, narcotics, arson, and sex. Prerequisite: CJC 210.

CJC-216 Criminal Law II **(3-0-3)**

A continuation of CJC 105 with emphasis on North Carolina Law. The course deals with the concept of criminal responsibility and competency; the law of arrest, and search and seizure; rights of arrested persons; and the laws governing wiretapping and electronic surveillance. The case book approach is used, with leading cases assigned as outside reading and for class discussion. Prerequisite: CJC 115.

CJC-217 Patrol Procedures **(3-0-3)**

This course includes methods of personnel distribution and assignment, operation of vehicles on patrol, answering calls of various types. It provides the opportunity to develop perception and observation concerning person, places, and things. Safe driving techniques and uses of equipment are presented. Prerequisite: Permission of Department Chairperson.

CJC-220 Police Organization, Administration and Supervision **(5-0-5)**

Principles of organization and administration, personnel management and supervision, training, communication, records, property maintenance, and miscellaneous services are introduced. Prerequisite: None.

CJC-250-251-252 Topics in Criminal Justice—Law Enforcement **(1 to 6 credits)**

These courses provide credit for approved special education of college level beyond minimum standards (basic) training and outside the regular curriculum. The courses may be used only as electives with variable credit from one to a maximum of one-half the elective hours required. All credit awarded by this method must be documented by the department chairperson. Prerequisites: Departmental Approval.

CSP-100 Food Preparation I **(3-0-6-5)**

This course orients the student in the various opportunities in the food service industry as well as the classical stations of the "back of the house." The safety, care and use of the tools of the kitchen will be stressed. Basic sanitation and personal hygiene will be taught. Precosting and stewarding will also be stressed. Lectures and demonstrations will be followed by a practical lab. With emphasis on eye appeal and variety, the student will prepare and compose fresh, frozen, and canned vegetable plates, along with appropriate garnishes to demonstrate the merchandising of these plates. Students will be given an opportunity on a rotating basis to fill the various service positions in the College dining room during the live cafeteria-style services. Prerequisite: None.

CSP-101 Food Preparation I **(3-0-9-6)**

This course orients the student in the various opportunities in the food service industry as well as the classical stations of the "back of the house." The safety, care and use of the tools of the kitchen will be stressed. Basic sanitation and personal hygiene will be taught. Precosting and stewarding will also be stressed. Lectures and demonstrations will be followed by a practical lab. With emphasis on eye appeal and variety, the student will prepare and compose fresh, frozen, and canned vegetable plates, along with appropriate garnishes to demonstrate the merchandizing of these plates. Students will be given an opportunity, on a rotating basis, to work as a "commis" in a live production class in six cafeteria-style services. Prerequisite: None.

CSP-102 Food Preparation II **(3-0-6-5)**

The student will learn the principles of egg cookery including breakfast preparation. The student will prepare a variety of hot and cold hors d'oeuvres such as Quiche Lorraine, Coquille St. Jacque, Shrimp Remoulade, and Antipasto. The principles and techniques of innovative salad preparation and presentation will be covered. Ingredients, dressings, structure, assembly, and garnish will be emphasized. The student will be given the opportunity to develop skill in the prep of simple consommes as well as a variety of cream soups, chowders, bisques, and national/regional soups. Thickening agents will be evaluated for the thickening power, holding properties, ease of handling, appearance, and taste. Lectures and demonstrations will be followed by a lab. The student will receive training in fine dining table service techniques and will have an opportunity to practice these skills in 6 live a la carte productions. Prerequisite: CSP 100, CSP 107.

CSP-103 Food Preparation II **(3-0-12-7)**

The student will learn the principles of egg cookery including breakfast preparation. The student will prepare a variety of hot and cold hors d'oeuvres such as Quiche Lorraine, Coquille St. Jacque, Shrimp Remoulade, and Antipasto. The principles and techniques of innovative salad preparation and presentation will be covered. Ingredients, dressings structure, assembly and garnish will be emphasized. The student will be given the opportunity to develop skill in the prep of simple consommes as well as a variety of cream soups, chowders, bisques and national/regional soups. Thickening agents will be evaluated for the thickening power, holding properties, ease of handling, appearance and taste. Lectures and demonstrations will be followed by a lab. The commis will be involved in six live (a la carte) productions. Prerequisites: CSP 101 and CSP 107.

CSP-104 Food Preparation III **(3-0-9-6)**

Emphasis is on the preparation of entrees and their sauces. Exotic and delectable table d'hote menus will be prepared and combined with the main course. Portion control will be stressed. Beef, veal, lamb, and pork in their primal cut form will be used on occasion to demonstrate meat cutting methods. Preparation of seafood with compound butters and sauces will be included. A variety of poultry dishes will be presented. The selection and use of stocks and bases will be discussed. Production classes will involve the students in set-up, decorations, organization, and service of 6 international buffets. Prerequisite: CSP 102.

CSP-106 Food Preparation III **(3-0-12-7)**

Emphasis is on the preparation of entrees and their sauces. Exotic and delectable table d'hote menus will be prepared and combined with the main course. Portion Control will be stressed. Beef, veal, lamb and pork in their primal cut form will be used on occasion to demonstrate meat cutting methods. Preparation of seafood with compound butters and sauces will be included. A variety of poultry dishes will be presented. The selection and use of stocks and bases will be discussed. Production class will feature six international buffets. Prerequisite: CSP 103.

CSP-107 Food Service Equipment Orientation **(1-2-0-2)**

This course is to familiarize the student in the operation and safe handling of every major piece of mechanical equipment in the kitchen of the college lab. He will be given the opportunity to learn the inner workings of each piece of kitchen equipment, breaking it down for cleaning and subsequent restructure into its functional entity once again. Functions, uses, operating techniques and safety devices of each piece of equipment will be stressed. Prerequisite: None.

CSP-108 Menu Planning **(1-2-0-2)**

In this course the student will be involved in writing, planning, and merchandising different types of menus. The influence of location, plant, equipment, employees, and customers will be discussed. Techniques used to identify and understand the customer's needs will be stressed. The essential human food requirements will also be discussed and implemented in the menu. Prerequisites: None.

CSP-109 International Cuisine **(2-2-0-3)**

Essentially a research course that will attempt to discover, isolate and trace to their sources the factor which distinctly identify and label the cuisines, culinary practices and techniques of specific countries and certain general geographical areas of the world.

This course will include but not be limited to investigation into and discussions of the history, geography, philosophy, arts, and social structure of the cultures in question, to determine their effect upon gastronomic habits. The course will also look into the origins of famous preparations such as Chicken Marengo, Crepes Suzette, Ceasar Salad, Peach Melba, et al.

Only through investigations such as these can the student develop the background, knowledge, and sensitivity so vital to the creative role of the chef. Prerequisites: CSP 101.

***CSP-110 Supervised Work Experience** **(2-0-40-6)**

This course is planned to give the student an opportunity to work in the industry and gain practical experience. Prerequisite: Successful completion of major courses through 3rd quarter or departmental approval.

CSP-114 Gardemanager **(2-0-3-3)**

This course is to develop the skills and to teach the students the art of gardemanager, the preparation of cold foods. Presentation of piece monte such as chaud froid, grosse piece, and bread weaving will be included. Demonstration will be given for ice carving, pastillage, marzipan, and tallow sculpture. Prerequisite: First year curriculum.

CSP-201 Food Preparation IV **(3-0-12-7)**

The ultimate in advanced culinary preparations is taught. New skills, methods, and preparations will be emphasized. In conjunction with the classical lab, the students will learn, develop and apply an appreciation of table service and techniques. A complete table d'hote menu will be prepared. In the production class, the student will assume the role of chef de partie, sous chef or chef of the day, with the responsibility of planning, precosting and producing a cafeteria-type service. Supervising a station and or the entire kitchen will be emphasized to expand the participant's knowledge of both team work and supervision. Prerequisites: First year curriculum and CSP 110.

CSP-203 Dining Room **(1-0-3-2)**

This course focuses on various forms of dining room service. American, French, Russian and buffet service techniques and procedures will be applied. Practical skill is developed through actual table service in the "Tar Heel Room" of the College. The student will be given an opportunity to perform, on a rotating basis, the role of maitre d'hotel, waiter/waitress. This program will also cover, when applicable, gueridon service. French menu terminology, dining equipment utilization and merchandizing of the dining room will be stressed. Prerequisite: First year curriculum.

CSP-207 Food Preparation VI **(3-0-12-7)**

The student is afforded an opportunity to broaden knowledge and gain practical experience in the preparation of representative foods of different countries. The menus will offer a wide variety of international dishes. Included will be cuisines of Scandinavia, Italy, the Orient and Germany. Buffet planning and layout will also be taught. Emphasis will be on development of personal and professional competence. Prerequisite: CSP 210.

CSP-208 Convenience Foods **(1-2-0-2)**

This course is designed to show the students the potentials of convenience foods and how to use them. Programming convenience foods into the menu will be discussed. Comparisons will be made to test the feasibility and quality of convenience food products. The students will be required to demonstrate their understanding of convenience foods by the integration of convenience policies and procedures into a classical menu. Prerequisite: First year curriculum.

CSP-210 Food Preparation V **(3-0-12-7)**

This course will pull together the student's knowledge and resources in menu planning, forecasting, purchasing, and preparing on a la carte and/or table d'hote menu. This application will be demonstrated in the form of a live production class in the main dining room of the college. The menus will be made up of hors d'oeuvres, soups, entrees, and desserts. Heavy emphasis will be placed in the mise en place of these preparations. Prerequisites: First year curriculum, CSP 114, CSP 201, CSP 203.

CSP-214 Wine Appreciation **(1-2-0-2)**

This course is designed to have the students practice advanced food preparation on the gueridon in conjunction with the service of wine. Geography, history, classification, and vintages of the wines will be taught and discussed. Tasting and selecting the appropriate wine for the gueridon preparation will be emphasized. Prerequisite: First year curriculum.

DEN-1103 Dental Materials I **(2-2-0-3)**

A study of physical and chemical properties and origin of dental materials, including the manufacturing process of specific materials. Laboratory exercises are designed to develop skills in manipulation and in understanding the application of the materials to dental procedures. Emphasis is on gypsum products, impression materials, polymers, and amalgam alloys. Prerequisite: None.

DEN-1104 Oral Anatomy and Histology **(2-2-0-3)**

The study of embryology, histology, anatomy, physiology, morphology of the human dentition and its supporting structure and environment. Laboratory sessions are structured to facilitate the learning of form, function, and identification of oral structures with special emphasis on the identification of the primary and permanent dentition. Prerequisite: None.

DEN-1105 Dental Science **(4-0-0-4)**

A study of the basic principles of general and oral pathology and the prescription and administration of drugs commonly used in dentistry. Prerequisite: DEN 1104.

DEN-1106 Head and Neck Anatomy **(2-0-0-2)**

The study of the bones, muscles, blood, lymph and nerve supplies of the head and neck region. Landmarks of the skull are identified and the relationship of head and neck anatomy to dental assisting is emphasized. Prerequisite: DEN 1104.

DEN-1120 Clinical Science I **(3-4-0-5)**

A study of clinical procedures and treatment; the recognition, care, and use of basic dental instruments and equipment, and the manipulation of materials associated with operative dentistry. Emphasis is on developing skill competencies, in anticipating the needs and assisting the dentist in four-hand dental procedures. Prerequisite: None.

DEN-1121 Dental Radiology **(3-4-0-5)**

The principles and techniques of exposing, processing, mounting, filing and storing intraoral and extraoral radiographic film. Characteristics of film, film selection for various techniques and care of equipment and facilities are included. Radiation physics, biological hazards and protection of patient, operator and others are emphasized. Laboratory and clinical practices are designed according to current legal requirements. Prerequisite: None.

DEN-1122 Dental Materials II **(2-2-0-3)**

A continuation of Dental Materials I, with emphasis on mastery of the manipulation of various materials, e.g. cavity varnishes and liners, dental cements, waxes, dressings, and casting gold alloys. Prerequisite: DEN 1103.

DEN-1123 Oral Health Education **(2-4-0-4)**

A study of the prevention and control of dental caries and periodontal disease with emphasis on the dental assistant's role in oral health education. Audiovisual materials, phase microscope, caries susceptibility tests and plaque scoring indices are included in the interpretation of dental health information. Communication skills, nutritional counseling, oral physiotherapy and fluorides are emphasized through clinical experiences in patient education. Prerequisite: DEN 1104, DEN 1120.

DEN-1125 Dental Affiliation I **(1-0-12-5)**

A clinical practice learning experience for competency development in performing dental assisting duties in dental offices and clinics. Clinical practice, primarily in general dentistry, will include chairside assisting techniques, and clinical support procedures. Prerequisite: All first and second quarter courses.

DEN-1130 Clinical Science II **(3-3-3-5)**

A clinical science course to increase skill competency levels in operative dentistry. Major emphasis is given to principles and procedures of the dental specialties, including endodontics, periodontics, orthodontics, prosthodontics, pedodontics, oral surgery, and public health dentistry. Prerequisite: DEN 1120.

DEN-1131 Dental Office Management **(3-2-0-4)**

Principles and procedures related to dental office management. Fundamentals of accounting and financial management are applied to dental office procedures. Opportunity for competency development in preparing, processing, maintaining and storing records; communications; scheduling appointments; inventory control and patient management. Prerequisite: None.

DEN-1133 Dental Office Emergencies **(2-2-0-3)**

The study of the more common dental/medical emergency situations which may occur in the dental office. Attention will be directed toward the recognition and initial treatment of these emergencies via the use of the knowledge of the vital signs, and the implementation of the emergency kit, oxygen and/or cardiopulmonary resuscitation. Prerequisite:DEN 1104, DEN 1120, DEN 1130.

DEN-1135 Dental Affiliation II **(1-0-18-7)**

A clinical practice learning experience to increase dental assisting skills to job-entry level competency. Clinical assignments in various dental specialty practices, as well as general dentistry practices, will provide opportunities for advanced skill development in chairside assisting techniques, clinical support and business office procedures. Prerequisite: All first, second, third quarter courses.

DEN-1141 Professional Development **(3-0-0-3)**

Designed to prepare the student for employment as a dental assistant. Ethical, legal and personal responsibilities; testing and certification requirements; career opportunities; resumes and interviewing techniques. Prerequisite: All first, second, third quarter courses.

DFT-101 Drafting **(2-4-4)**

Introduction to field of drafting; lettering; use of instruments; geometric constructions; orthographic projection theory, sketching; reading, and instrument drawing; basic pictorial drawings; introduction to dimensions and notes; and reproduction process. Prerequisite: None.

DFT-102 Drafting **(2-4-4)**

Auxiliary views; sections, and conventions; dimensioning and shop notes for detail drawings; introduction of working drawings; screw threads, fasteners, keys, and springs; and simple assembly drawings. Prerequisite: DFT 101.

***DFT-103 Drafting** **(2-4-4)**

The study of precision dimensioning; preparation of set of working drawings; assembly drawings, detail drawings, and part lists; surface quality (finish), and weldments and symbols. Prerequisite: DFT 102.

DFT-104 Civil Drafting **(2-4-4)**

Plats as required by law drawn in pencil and ink. Highway construction layouts and profiles, steel and wood structural drawings, topographical mapping and symbols. Prerequisite: DFT 101.

***DFT-106 Technical Graphics (2-4-4)**

A basic course with an introduction to industrial drafting standards and practices. Special emphasis on representation and analysis of experimental data incorporating various graphical devices. Topics include use of drafting instruments and equipment; freehand lettering; multiview drawing; rectilinear, semi-log, and full-log graphing for display and analysis; polar and trilinear graphs; flow and pictorial diagrams. Prerequisite: None.

DFT-109 Electronic Drafting (2-4-4)

A basic course with an introduction to industrial drafting standards and practices with applications to the electronics industry. Preliminary topics include use of drafting instruments and equipment; freehand lettering; multiview drawings. Special emphasis is placed on remaining topics including electrical and electronic symbols; block diagrams, schematic diagrams and wiring diagrams. Prerequisite: None.

***DFT-201 Design Drafting I (2-6-4)**

Structural steel layout and detailing; application of structural shapes; fluid distribution; selection of pipe, tubing and fittings, single line piping diagrams and two line piping drawings; electronic and electrical symbols; and single line, schematic, and wiring diagrams. Emphasis will be placed on use of catalog and manuals related to the above areas of study. Inking technique and use of special drafting media will be applied where appropriate. Prerequisite: DFT 103.

DFT-204 Descriptive Geometry (2-6-4)

Points, edges, lines, planes, curved lines, curved surfaces, irregular surfaces, intersections, developments, auxiliary projections, revolutions, vectors, and practical design applications. Prerequisite: DFT 102.

***DFT-205 Design Drafting II (2-6-4)**

Charts and graphs; plats as required by law; topographical mapping and symbols; and design layouts and working drawings of gears, gear train drives, belt and pulley drives, and chain and sprocket drives. Prerequisite: DFT 103.

***DFT-206 Design Drafting III (2-6-4)**

Assignment of mechanical design projects requiring use of research; application of basic engineering principles; calculations; and use of various manuals, catalogs, and periodicals. Preliminary design sketches, layout drawings, detail drawings, subassembly drawings, assembly drawings, specifications, patent drawings and simplified drawing practices will be required. Prerequisites: DFT 205 and DFT 211.

***DFT-211 Mechanisms and Kinematic Design (2-6-4)**

Introduction and definitions of kinematic terms; vectors; motion concepts; kinematic drawing; kinematic displacement, centros, velocities and accelerations of mechanisms; motion curves; displacement diagrams and cam layout; and practical problems, gear trains, cams, belts and pulleys, and chains and sprockets. Prerequisites: DFT 204, DFT 205, and PHY 102.

***DFT-212 Jig and Fixture Design (2-6-4)**

Emphasis is placed on tool planning, design and drafting; commercial standards, principles and practices; selection of materials and standard parts; use of catalogs and manuals; and cost estimates. Projects are assigned requiring the design of jigs, fixtures, and gauges. Prerequisite: DFT 205.

***DFT-220 Computer Aided Drafting (3-3-4)**

Introduction to Computer Aided Drafting with related problems and exercises designed to give student an understanding of a computer graphics work station as a drafting tool. Student will interact a digitizer, CRT, printer and plotter to produce 2-D drawings and documentation. Prerequisites: EDP 105 and DFT 102.

***DFT-221 Advanced Computer Aided Drafting and Design (2-6-4)**

A continuation of DFT-220 Computer Aided Drafting. Student will continue to work with new commands and command structure. Problems and exercises will place emphasis on advanced 2D and introduction to 3D CAD. Prerequisite: DFT 220.

***DFT-1126 Pattern Development and Layout (0-3-0-1)**

A study of methods used in layout of sheet steel. Special emphasis is placed on developing pipe and angle layouts by the use of patterns and templates. Prerequisite: BPR 1104.

DFT-1127 Construction Trades Drafting I (2-2-0-3)

Use of instruments; lettering; planning and preliminary sketches; dimensioning practice; and use of symbols and conventions will be utilized in the development of working drawings for a residence. Emphasis will be on preparation of floor plan and typical wall section. Prerequisite: BPR 1109.

DFT-1128 Construction Drafting II (2-2-0-3)

A continuation of DFT 1127 with emphasis placed on development of foundation plan, exterior elevations, sections and details found in set of working drawings for a residence. Prerequisite: DFT 1127.

DFT-1207 General Machine Drafting (2-4-0-4)

Use of instruments; lettering orthographic drawing, sections and primary auxiliary views; dimensioning; displacement, timing and motion diagrams; and cam layout. Prerequisite: BPR 1106.

***DFT-1209 Tool Design and Planning (2-4-0-4)**

This course will enable the student to plan the process of production and isolate the areas that must be tooled for production. Cost of tools, jig and fixtures, and gaging will be considered. Students will review available items from vendors and utilize standard bushing charts and other references. Typical tool design procedures will be employed and prints must reflect standard procedures. Prerequisite: DFT 1207.

DHY-101 Dental Anatomy (2-4-0-4)

A study of the anatomy and morphology of permanent and deciduous teeth together with their environment and supporting structures. Laboratory experiences include examination of natural teeth and the utilization of models and skulls. Prerequisite: None

DHY-102 Head and Neck Anatomy (2-0-0-2)

A detail study of the structures of the head and neck regions and their functions. Emphasis will be placed on the musculature, circulatory and lymphatic systems, bone, nerve supply and landmarks of the skull. Attention is directed to the relationship of head and neck anatomy to dental hygiene practice. Prerequisite: None.

DHY-105 Dental Radiology II (1-3-0-2)

This course will prepare the student for the clinical practice of dental radiology. Prerequisite: DHY 108.

DHY-106 Oral Embryology and Histology (2-0-0-2)

A study of the oral histological development of the face and oral cavity, structures and functions of primary tissues, and the development of teeth and supportive tissues. Prerequisites: BIO 101, DHY 101, and DHY 102.

DHY-108 Dental Radiology I (3-2-0-4)

A study of the scientific principles of radiology, including the biological effects of radiation and radiation safety. The student will be introduced to the exposing and processing of dental radiographs. Prerequisite: None. Corequisite: DHY 101.

DHY-110 Pre-Clinical Dental Hygiene I (2-6-0-5)

A study of principles and techniques for preoperative procedures and clinical dental hygiene procedures as well as development of a professional vocabulary. Initial development of a career philosophy and personal values for clinical dental hygiene practice is encouraged. Prerequisite: None.

DHY-111 Pre-Clinical Dental Hygiene II **(3-6-0-6)**

Theories and techniques for prevention of dental disease, including etiology, detection, removal and prevention of dental deposits are studied and practiced. Patient assessment, education and evaluation emphasize the concept of total patient care in dental hygiene practice. Prerequisites: DHY 101, DHY 110.

DHY-114 General and Oral Pathology I **(2-0-0-2)**

The introduction of general and oral pathology, and the nature of disease with emphasis on therapy of diseased conditions the dental hygienist may encounter in practice. Prerequisite: BIO 102, DHY 106.

DHY-115 General and Oral Pathology II **(2-0-0-2)**

A continuation of DHY 114. Prerequisite: DHY 114.

DHY-116 Dental Hygiene Seminar I **(3-2-0-4)**

A continuation of DHY 111 designed to prepare the student for clinical experience through the application of theory and skills. Dental office emergencies, first aid, and CPR are included. Prerequisite: DHY 111.

DHY-117 Dental Hygiene Clinic I **(0-0-9-3)**

The student provides direct patient care services for patients from the community in the dental hygiene clinic at a beginning level. Prerequisite: DHY 111.

DHY-118 Dental Hygiene Seminar II **(2-2-0-3)**

In this course the student will be introduced to the remaining psychomotor skills necessary to perform total patient care including management of the special patient. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 116 and DHY 117.

DHY-119 Dental Hygiene Clinic II **(0-0-9-3)**

The student demonstrates increased levels of competency in the performance of traditional and supportive tasks in the dental hygiene clinic with patients from the community. Prerequisites: DHY 116 and DHY 117.

DHY-203 Community Dental Health I **(3-2-0-4)**

A study of the principles and methods used in assessing, planning, implementing, and evaluating a dental health program. Prerequisites: PSY 101, SOC 201.

DHY-205 Periodontology **(3-0-0-3)**

A study of the biological and clinical factors as they relate to periodontal disease. Prerequisite: DHY 106.

DHY-206 Dental Materials **(3-4-0-5)**

A study of the source and physical properties of materials used in dentistry. Manipulation of various materials is practiced with emphasis on the role of the hygienist when delivering direct patient care. Prerequisite: None.

DHY-216 Dental Hygiene Seminar III **(3-3-0-4)**

A study of nutrition as it relates to the dental patient emphasizing the role of the dental hygienist concerning diet analysis, nutrition and foods contributing to dental health. Externships provide the student with enrichment experiences off campus. Prerequisite: DHY 118, DHY 119, NUT 202.

DHY-217 Dental Hygiene Clinic III **(0-0-12-4)**

This course focuses on increased levels of competency for performance of all required clinical skills. Emphasis is given to care of patients with periodontal disease. Prerequisite: DHY 118, DHY 119.

DHY-218 Dental Hygiene Seminar IV **(3-3-0-4)**

This course encourages students to develop personal traits and skills which enhance their employability as a provider of oral care. Externships provide the student with enrichment experiences off campus. Prerequisite: DHY 216, DHY 217.

DHY-219 Dental Hygiene Clinic IV **(0-0-12-4)**

A continuation of DHY 217 with demonstration of increased levels of competency expected. Prerequisite: DHY 216, DHY 217.

DHY-221 Pharmacology **(3-0-0-3)**

A basic study of physical and chemical properties, dosages and therapeutic effects of drugs used in dentistry, and drugs which have clinical significance in management of routine and emergency dental patients. Prerequisites: BIO 102, DHY 115.

DHY-222 Community Dental Health II **(1-4-0-3)**

A continuation in the study of dental public health and emphasis on assessing, planning, implementing, and evaluating a dental health program. Prerequisite: DHY 203.

DHY-223 Dental Hygiene Seminar V **(3-3-0-4)**

A study of the codes of the ethics and laws which govern the practice of dentistry and dental hygiene and their application to continual professional development. Externships provide the student with enrichment experiences off campus. Prerequisite: DHY 218, DHY 219.

DHY-224 Dental Hygiene Clinic V **(0-0-12-4)**

The treatment of an increased number of patients during each clinic session without sacrificing quality of care is emphasized. The student is expected to demonstrate exit level competencies for performance of all clinical dental hygiene practice tasks. Prerequisite: DHY 218, DHY 219.

ECO-102 Economics I **(3-0-3)**

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

ECO-105 Introduction to Economics **(5-0-5)**

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of laws of supply and demand and the principles bearing upon production, exchange, distribution, consumption, composition and pricing of national output, distribution of income, international trade and finance, and current economic problems Prerequisite: None.

ECO-107 Consumer Economics **(3-0-3)**

Designed to help the student use his resources of time, energy, and money to get the most out of life. It gives the student an opportunity to build useful skills in buying, managing his finances, increasing his resources, and to understand better the economy in which he lives. Prerequisite: None.

ECO-108 Consumer Economics **(5-0-5)**

An in-depth study of consumer economics integrating the basics of consumer economics with the functional application of economic principles. Prerequisite: None.

ECO-1107 Consumer Economics **(3-0-0-3)**

The goal of this course is to meet the consumer needs of Vocational Education students by preparing them, according to their abilities and interests, to manage limited resources under changing economic conditions. Budgeting and the use of credit constitute major areas of concern. Prerequisite: None.

EDP-104 Introduction to Business Data Processing **(2-2-3)**

Fundamental concepts and operational principles of business information systems are presented along with a variety of hardware and software applications. The goal of this survey course is computer literacy with a primary emphasis upon terminology and computer concepts. Prerequisite: None.

EDP-105 Introduction to Scientific Data Processing (2-2-3)

This course is designed to meet the data processing requirements of students in the Division of Engineering Technology. A problem-solving approach emphasizes concepts, operating systems, utilities, graphics, flowcharting, and BASIC programming. Prerequisite: MAT 101.

EDP-106 Introduction to Medical Data Processing (2-2-3)

A basic computer literacy course for the Allied Health student. The emphasis is on general computer concepts, data entry, information retrieval, packaged software, decision support systems, hospital information systems, and a variety of medical applications. Students learn to utilize existing hardware and software in the medical profession. Prerequisite: None.

EDP-107 Operating Systems (3-2-4)

This course is designed to provide the business computer programming student with a working knowledge of computer system software including System Support Programs, UNIX, and MS-DOS. System resource management, scheduling, error recovery, data management, and job management will be emphasized. Proficiencies in operating system utilization and OCL will be required. Prerequisite: EDP 104.

EDP-115 Program Design and Development (4-0-4)

A fundamental course for the student of business computer programming. Topics include: flowcharting, pseudocode, HIPO, IPO, structured programming techniques, modular design, and top-down methodologies. A variety of logic problems will be presented and discussed. Prerequisite: EDP 104.

EDP-118 Database Management Concepts (3-2-4)

An introduction to database concepts in a business information systems environment. Students design, develop, and maintain database applications in a distributed data processing configuration. Fourth and fifth-generation software methodologies and query languages are introduced. Prerequisite: EDP 107.

EDP-160 EDP Operations (2-2-3)

A production lab environment is provided for the study of computer operations. The student will receive practical experience in the utilization of job management and system maintenance. Other topics include: utilities, OCL, spooling, cataloging, interactive processing, interrupt handling, and related OS features. Both microcomputer and mainframe concepts will be emphasized. Prerequisites: EDP 104.

EDP-164 Introduction to Programming (2-2-3)

The student will study general principles of computer processing and develop an elementary working knowledge of the BASIC computer programming language. Prerequisite: None.

EDP-200 Introduction to Microcomputers (2-2-3)

This course is designed to provide the business computer programming student an introductory study of microcomputer hardware, software, operating systems, internal architecture, application packages, communications, and mainframe support. The course will also emphasize various configuartions, peripheral equipment, interfaces, and microprocessor characteristics. Prerequisite: EDP 107.

EDP-201 Advanced Microcomputer Applications (2-2-3)

An intensive study and utilization of decision support software including Lotus 1-2-3, Framework, or other popular integrated packages. The student will design, implement, and maintain a system using spreadsheet, data base, word processing, and graphics modules. Mainframe to PC communications, file transfers, and distributed support software will complement the microcomputer based application. Prerequisite: EDP 200 or IFM 200.

EDP-208 Commercial BASIC **(2-2-3)**

The purpose of this course is to provide a survey of BASIC, emphasizing commercial applications. Areas of study will include BASIC syntax and logic, program design, print formatting, file maintenance, screen maintenance, user functions, system calls, chains and swaps, comparative BASIC's and BASIC systems. Prerequisite: EDP 104.

EDP-215 Programming I: COBOL **(4-0-4)**

The Common Business Oriented Language is presented in detail. A variety of commercial applications are developed, implemented, and tested. Prerequisite: EDP 107 and BUS 121.

EDP-216 Programming II: COBOL **(1-3-2)**

An advanced course in COBOL systems and procedures. Topics of study include: table handling, calling- and sup-programs, file structures, access techniques, screen facilities, and operating system interfaces. Advanced programming methodologies are integrated into the lab assignments. Corequisite: EDP 215.

EDP-218 Programming I: RPG II **(4-0-4)**

Report Program Generator (RPG II) coding includes preparation of spacing chart, file description, file extension, input, calculation, and out-put specifications. Business application programs are written. Prerequisite: EDP 107, BUS 121.

EDP-219 Programming II: RPG II **(1-3-2)**

This advanced programming courses provides the student with additional experience in RPG II systems and procedures. Lab assignments and projects are typical of those used in business and industry and correspondingly advanced programming methodologies are emphasized. Corequisite: EDP 218.

EDP-220 Systems Analysis and Design **(2-3-3)**

In addition to learning theoretical concepts, students study an existing data processing system and make recommendations for improvement, or design a new system. The task includes analysis of the flow of data from its point of origin through all stages of data processing. Prerequisite: None.

***EDP-221 Advanced Projects** **(1-3-2)**

This course is designed to provide the student with experience in applying programming techniques to advanced problem solving. Students will utilize skills and techniques required in previous data processing courses to implement an integrated programming application. Prerequisite: EDP 220. Corequisite: EDP 160.

EGR-100 Introduction to Engineering Technology **(1-2-2)**

The broad scope of engineering technology is covered with later emphasis on specific fields. Differences between engineering and engineering technology, continuing education opportunities, employment outlook, duties of technicians on the job, and supporting functions of the college including financial aid and counseling are covered. Guest lecturers include former graduates and industry representatives. Films, field trips and engineering technology lab activities allow supplemental exposure.

Students will prepare a paper on a particular engineering technology topic to be approved by instructor. Prerequisite: None.

ELC-201 Electrical Machinery **(3-0-3)**

A course in basic understanding and application of electricity to modern industrial machinery. Included is a study of D.C. and A.C. generators, motors, motor controls and protecting devices, transformers, and their industrial applications. Prerequisite: PHY 103.

ELC-1117 Basic Electricity **(3-2-0-4)**

A study of the electrical structure of matter and electron theory, the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits. An analysis of direct current circuits by Ohm's Law and Kirchoff's Law. A study of the sources of direct current voltage potentials. Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits. Prerequisite: None.

ELC-1118 Applied Electricity **(3-2-0-4)**

Provides fundamental concepts in single and polyphase, alternating current circuits, voltages, currents, power measurements, transformers, and motors. Instruction in the use of electrical test instruments in circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type of control used in small appliances such as: thermostats, timers, or sequencing switches. Applicable sections of the current National Electrical Code will also be presented. Prerequisite: ELC 1117.

ELC-1119 Electricity for Welders **(3-2-0-4)**

A study of the relationship between voltage, current, and resistance in series and parallel circuits. Analysis of A.C. and D.C. circuits by Ohms and Watts laws. A study of D.C. current motors and generators. A study of transformers, rheostats and controls, basic study of grounding, bonding and calculation of conductors. Prerequisite: None.

ELC-1201 Electricity—Industrial **(2-2-0-3)**

A study of the relationship between voltage, current and resistance in series, parallel and combination circuits. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis. Prerequisites: None.

ELN-101 Fundamentals of D-C **(4-4-6)**

Principles of direct current electricity including: basic electron physics; electrical units of measure; Ohm's law, series, parallel, and series-parallel resistive networks; Kirchhoff's laws; basic measuring instruments; power transfer, Thevinin and superposition theorems. Laboratory experiments provide proof of the important concepts developed. Prerequisite: Math 100 or permission of Department Chairperson.

ELN-102 Fundamentals of A-C **(4-4-6)**

Principles of alternating current electricity including: sine wave analysis, resistive, capacitive, and inductive networks; phasor relations in complex circuits; non-resonant and resonant series and parallel L-C-R circuits; inductive coupling; air and iron core transformer analysis. Important theoretical concepts are substantiated by laboratory experiments. Prerequisite: ELN 101.

ELN-103 A.C. Network Analysis **(4-4-6)**

The principles of A.C. are now applied to complex circuits with graphical and equivalent circuit analysis. Networks are analyzed with the use of Thevinin's Theorem, Norton's Theorem, Kirchhoff's Voltage and Current laws and the Superposition Theorem. Network Analysis combined with practical lab examples will develop the skills necessary for understanding the circuit performance of complex networks. Prerequisite: ELN 102.

ELN-106 Introduction to Solid State Devices **(4-4-6)**

An introduction to semiconductor theory, followed by D.C. analysis of the PN Junction, semiconductor diodes (conventional and Zener) and bipolar transistors. Graphical analysis of characteristic curves, load lines, and transistor biasing is studied in conjunction with thermal effects and power dissipation. The course emphasis is directed toward circuit design utilizing hybrid parameters. Prerequisite: ELN 103.

ELN-207 Transistor Amplifier Analysis **(4-4-6)**

Further development of the semiconductor studies of ELN 106. Alternating current circuit concepts are introduced for the analysis of the transistor amplifier in the common emitter, common collector, and common base configurations. Darlington amplifiers, cascade amplifiers, transistor stabilization techniques, and field effect transistors are studied from a designer's perspective. Laboratory experiments give practical hands on experience of transistor amplifiers. Prerequisite: ELN 106.

ELN-209 Circuit Analysis **(4-4-6)**

A study of special purpose amplifiers and their effect on circuit operation. Analysis of MOSFET and JFET amplifiers, high frequency transistor amplifiers, negative feedback amplifiers, oscillators, amplifier distortion and the operational amplifier (OP AMP) is introduced. Other important topics include impedance matching and regulated power supply design. Laboratory examples will further explore the key concepts. Prerequisite: ELN 207.

ELN-211 Digital Circuits **(4-4-6)**

This course presents the principles of solid state and integrated logic circuits. Upon completion of this course students should be able to: read logic diagrams and use manufacture's specifications for digital circuit design; understand discrete component breakdown of logic gates; implement circuitry using AND, OR, NAND, NOR and inverter gates; utilize R-S and J-K flip-flops as memory devices, counters, and shift registers, understand decoder circuitry to drive LED displays; and finally, assembling the above circuitry using breadboarding technique in the laboratory. Prerequisite: ELN 106, MAT 121.

ELN-213 Waveshaping and Pulse Circuits **(4-4-6)**

A course continuing studies initiated in ELN 211 and covers further analysis of operational amplifier circuits. Logic circuits study is extended to include Schmidt trigger, monostable, bistable, and astable multi-vibrators. Operational amplifier circuits include differentiators, integrators, ramp generators, comparators, A & D converters as well as additional studies of integrated circuits. Laboratory experiments provide practical applications of these circuits. Prerequisite: ELN 209.

ELN-214 Microprocessors **(4-4-6)**

A study of the computer on a chip. This study includes combinational logic circuits, numbering systems, memory—RAM/ROM, Tri-state control, busing, Peripheral interface adapter. The units are studied from both a hardware and programming technique and are combined into a micro-computer system for analysis. Prerequisite: ELN 211.

ELN-217 Introduction to Special Devices **(4-4-6)**

A study encompassing semiconductor devices with negative resistance characteristics or other special properties. Devices studied include unijunction transistors, four layer diodes (SCR, SCS, TRIAC, etc.), tunnel diodes, Shockley diodes, and others. Prerequisite: ELN 106.

ELN-219 Industrial Instrumentation **(4-4-6)**

An investigation into sensing devices (transducers), information processing and discrimination recorders, output devices, and their interface with practical control systems. These elements as well as programmable controllers and Robotics are considered in analog and digital applications to industrial control and automation systems. Prerequisite: ELN 209, ELN 211.

ELN-221 Electronic Circuit Design **(1-6-3)**

A research project for the advanced student to provide a realistic and creative application of his fundamental electronic knowledge to a demonstrable system of his own design. A further objective in cooperation with the English department is to provide further experience in preparing meaningful technical reports. Prerequisite: ELN 209, ELN 211.

EMS-100 Introduction to Emergency Medical Services **(2-2-0-3)**

An introduction to the pre-hospital care of the critically ill or injured that will prepare students to act as first responders. Students will complete certification requirements for cadiopulmonary resuscitation. Prerequisite: Departmental Approval.

EMS-101 Fundamentals of EMS **(8-0-6-10)**

This course is designed to introduce the student to the health care system and the function of emergency medical service providers within that system. A team approach is emphasized, and initial assessment and management of illness and injury is introduced. Fundamental, cognitive and manipulative skills common to the basic emergency care and assessment of both ill and injured patients will be practiced in the laboratory and clinical portions of this course. Theoretical principles underlying the use of equipment commonly found on ambulances, and initial treatment and evaluation of various emergency problems are emphasized. Upon successful completion of this course the student will be eligible to test for certification as an Emergency Medical Technician through the North Carolina Office of Emergency Medical Services. Prerequisite: Departmental Approval.

EMS-103 Principles of Extrication and Rescue (4-3-0-5)

This course is designed to acquaint the student with techniques of extrication and rescue by presenting a comprehensive approach to the problems of gaining access, disentanglement, packaging and removal of persons entrapped in wrecked vehicles. Skills will also include water rescue, rescue from heights, rescue from depths, and rescue from burning buildings. A wide range of problems which occur during any rescue operation and for which the professional rescuer must be prepared is included. Prerequisite: Departmental Approval.

EMS-104 Injury Management I (4-2-0-5)

This course emphasizes physical assessment of patients with specific medical and trauma related problems. In addition, principles of fluid and electrolyte balance are discussed as they apply to the treatment of shock and other disorders. Prerequisite: EMS 101, Departmental Approval, current N.C. EMT certification. Corequisite: BIO 102, EMS 105.

EMS-105 Clinical Seminar and Practicum I (2-0-9-5)

Beginning experience in hospital observation and field experience. Students present case studies from their field or hospital experience for informal discussion by the group. Emphasis is placed on the integration of theoretical knowledge obtained in EMS courses with the realities of practical field oriented patient care. Prerequisite: EMS 101, Departmental Approval, current N.C. EMT certification. Corequisite: BIO 102, EMS 104.

EMS-106 Introduction to Pharmacology (2-2-0-3)

This course introduces commonly used drug measurements and the calculation of dosages. Parenteral techniques of drug administration are emphasized. Students will become familiar with drug forms, drug sources and control of drug use. Prerequisite: EMS 104, EMS 105.

EMS-108 Clinical Seminar and Practicum II (2-0-9-5)

Planned learning in hospital and field settings is included. Emphasis is placed on the integration of theoretical knowledge with clinical practice. Care of patients with disorders of hydration, volume loss, and metabolism is included. Prerequisite: EMS 104, EMS 105.

EMS-110 Pharmacology for EMS (2-2-0-3)

This course explores the fundamental classification and action of common chemotherapeutic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of acutely ill patients. Prerequisite: EMS 106, EMS 108. Corequisite: EMS 111, EMS 201.

EMS-111 Clinical Seminar & Practicum III (2-0-9-5)

Guided learning in hospital and field settings is included. Techniques of drug administration, intervention, and side effects will be stressed. Management of acute cardiac disorders will be emphasized. Prerequisite: EMS 106, EMS 108. Corequisite: EMS 110, EMS 201.

EMS-112 Emergency Vehicle Operation, Communications and Record Keeping (4-3-0-5)

The first phase of this course examines the principles and practices governing the safe operation and maintenance of emergency vehicles. Students will practice advanced driving maneuver skills during this phase. The second phase prepares the student to effectively utilize emergency communications equipment. This phase also introduces the student to the need and expanding use of record and data processing in the field of emergency care. Prerequisite: Departmental Approval.

EMS-201 Advanced Life Support I (4-2-0-5)

In this course, anatomy and physiology of the cardiopulmonary systems are reviewed. Basic electrocardiography and the study of common cardiac arrhythmias are introduced. Coronary artery disease, acute myocardial infarction including early warning signs, electrical arrhythmias, and mechanical complications of heart disease are discussed. The laboratory provides programmed instruction in basic arrhythmia recognition and familiarizes the student with cardiac monitoring techniques and devices. Prerequisite: EMS 106, EMS 108. Corequisite: EMS 110, EMS 111.

EMS-202 Clinical Seminar and Practicum IV **(2-0-9-5)**

Guided learning experience in the care of patients with complex problems is included. Emergency room intensive care unit and field experience provide emphasis on the assessment and treatment of victims with unstable mental and physical problems of a critical nature. Prerequisite: EMS 108, EMS 110, EMS 201; Corequisite: EMS 205.

EMS-203 Emergency Psychiatric Care **(3-0-0-3)**

This course begins with an overview of the characteristics of various neurotic and psychotic disorders. Emergency intervention in patients who exhibit suicidal, assaultive, destructive, resistant, bizarre, toxic, amnesic, or paranoid behavior is covered. In addition, the student becomes acquainted with the paramedic role during the pre-hospital care of psychiatric patients and the legal commitment process for mandatory psychiatric treatment. Prerequisite: PSY 203.

EMS-204 Adjuncts for Airway Control and Ventilation **(0-2-0-1)**

This course is designed to acquaint the student with basic and advanced techniques of adjunctive airway control and ventilation of patients who are experiencing respiratory compromise. Anatomy and Physiology of the respiratory system is reviewed. Manual techniques of airway management and artificial respiration are reviewed and mechanical airway adjuncts are introduced. Emphasis is placed on advanced management techniques including endotracheal intubation. Skill proficiency will be attained in the laboratory portion of this course and reinforced by planned learning in the clinical setting. This course offered on demand only. Prerequisite: Departmental Approval.

EMS-205 Advanced Life Support II **(4-2-0-5)**

Review of the advanced care given to patients with injuries and illnesses involving the central nervous system, soft tissues, and the musculo-skeletal system. Medical and environmental injuries and illnesses will be addressed in terms of advance life support & techniques, appropriate drugs and intervention. Prerequisite: EMS 110, EMS 111, EMS 201; Corequisite: EMS 202.

EMS-206 Clinical Seminar and Practicum V **(2-0-9-5)**

Experience in the practice of advanced life support skills used is provided. Emphasis is placed on the care of patients with cardiovascular disorders. Experience is also provided in the care of patients during the ante-partial, intra-partial, and post-partial phases of pregnancy. Prerequisite: EMS 202, EMS 205; Corequisite EMS 207.

EMS-207 OB, Newborn, and Pediatric Emergencies **(4-0-0-4)**

Assessment and decision-making concerning obstetrical and gynecological emergencies are covered in this course. The student is prepared to recognize imminent birth and assist the mother in the delivery process. Recognition of both normal and complicated deliveries is expected. Emergency resuscitation techniques for the newborn, transportation of the high-risk infant, care related to traumatic abortion and to the rape victim are included. Emergency care specific to children concludes the course. Prerequisite: EMS 202, EMS 205; Corequisite: EMS 206.

EMS-211 Clinical Symposium **(2-3-6-5)**

The course allows the augmentation of all emergency care skills including basic and advanced life support, psychiatric, and maternity care as well as patient handling techniques. Students are expected to function as team members in field experience. Prerequisite: EMS 206.

ENG-090 English as a Second Language **(3-0-3)**

Reading and writing skills for the non-native speaker of English. After initial testing, the student is given oral and written exercises geared to his individual needs. Special attention is devoted to the reading and writing skills most useful in college. Prerequisite: None.

ENG-091 Guided Reading Skills **(3-0-3)**

This pre-college course is designed to strengthen the student's skills in reading and vocabulary comprehension. Diagnostic tests determine the student's entry level. An individualized program focuses on specific skills: finding the main idea, drawing conclusions, making inferences, understanding words in context, improving reading speed. Recommended for students preparing for the entrance examination. Prerequisite: None.

ENG-092 Mechanics of English Grammar **(3-0-3)**

A pre-college course designed to give students a thorough knowledge of basic English grammar and usage. Special emphasis is given to sentence structure, parts of speech, and punctuation. The instruction is individualized so that students can proceed at their own pace and get special help in problem areas. Prerequisite: None.

ENG-096 Study Skills **(3-0-3)**

This pre-college, individualized course gives practical experience in developing and utilizing study skills: how to use the dictionary and other reference aids; how to get maximum information from textbooks; how to take lecture notes; how to effectively memorize material; how to take objective and essay tests. Guidance is provided in developing sound study habits. Prerequisite: None.

ENG-100 Reading Comprehension **(1-2-2)**

A reading program designed to assist students in improving their reading skills. Emphasis is on reading for comprehension, vocabulary improvement, and increasing speed. Prerequisite: None.

ENG-101 Fundamentals of English **(3-0-3)**

A review of basic grammar fundamentals, the course is designed to aid students in achieving standard, effective self-expression, with emphasis on improving and developing appropriate written and spoken communication in day-to-day situations in their work and in their social life. Prerequisite: None.

ENG-102 Composition **(3-0-3)**

Designed to aid the student in further improvement of written communications, with emphasis on expository composing, through effective sentence structure, well-developed paragraphs, and fully organized compositions. Prerequisite: ENG 101 or ENG 111.

ENG-103 Report Writing **(3-0-3)**

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices, are completed. All students are required to prepare a full-length report based on material in their chosen curriculum. Prerequisite: ENG 102.

ENG-111 Grammar **(5-0-5)**

A basic course covering the fundamentals of English grammar. Emphasis is on grammar and sentence structure. Intended to provide the students with the basic tools for their roles in business. This course is primarily designed for students in the General Office curriculum. Prerequisite: None.

ENG-204 Oral Communication **(3-0-3)**

A study of basic concepts and principles of oral communications. Emphasis is placed on the speakers attitude, diction, voice, and the application of particular techniques to correct speaking habits and to produce effective oral presentation. Prerequisite: None.

ENG-205 Written Communications **(5-0-5)**

Designed for secretarial students who will initiate written documents for the employer. Primary emphasis is placed upon the development of skills in the techniques of writing business letters, such as credit and collections, complaints, orders, acknowledgements, remittances, inquiries, and answers to inquiries. Students also learn to write business reports based upon the accumulation of primary data in their field. Prerequisite: ENG 102.

ENG-206 Written Communication Skills **(3-0-3)**

Develops skills in the structure and strategy of writing action-producing letters, memorandums, proposals. Emphasis is placed on letters involving credit, collections, adjustments, complaints, orders and acknowledgements, remittances and inquiries. Prerequisite: ENG 102.

ENG-210 Independent Readings **(0-3-1)**

This course is designed to promote an interest in reading, especially reading outside the student's major area, to give the students an opportunity for discussion of current and classic works in the following 3 areas: North Carolina Fiction (since 1850), Southern Literature (modern) and Appalachian Literature. Prerequisite: None

ENG-1102 Communication Skills **(3-0-0-3)**

Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: ENG 100.

ENV-100 Man and His Environment **(3-0-3)**

A study of the "environmental crisis" including topics such as depletion of our nation's energy reserves; efforts to control pollution, and methods of population control. Solid waste disposal and recycling, sewage treatment, and industrial roles in the causes and controls of air, water, and the thermal pollution are covered to the extent that the student will have a working knowledge of factors essential to man's environment. Prerequisite: None.

HEV-1101 Diesel Engine Theory and Practice **(3-0-12-7)**

This course is designed as an introduction to the most common types of diesel engines. Each student will be subjected to the principles and theory of the diesel engine and required to work with several different types of engines. As the engines are rebuilt the proper use of hand tools and instruments will be taught. Standard procedures will be used in all engine work. Methods of checking the various parts of the engines will be employed. Prerequisites: None.

HEV-1102 Diesel—Electrical, Fuel, Lubricating and Cooling Systems **(5-0-12-9)**

This course continues from the engine course and will subject the student to the electrical system, fuel system, and lubricating systems. Each area will be treated as an individual unit. Each student will compare the various systems of heavy equipment. Preventive maintenance will be stressed in all areas. Types of fuel and the importance of pure and clean fuel will be taught. Tools, instruments, and machines related to these units will be presented. Prerequisites: HEV 1101, MEC 1101.

HEV-1103 Diesel—Hydraulic Systems, Steering, Suspension, Braking, Power Train, Injector Testing and Serving **(6-0-12-10)**

This course continues from the engine course and will advance the student into the actual hydraulic systems, steering suspension, braking, cooling system, and injector servicing and testing. Each subject area will be treated as an individual unit taught separately. Each student will be required to study the difference in systems on various pieces of equipment. Tools, machines, and instruments used in the various aspects of this work will be presented. Prerequisite: HEV 1102.

HEV-1105 Diesel—Service and Repairs **(4-0-6-6)**

This course is constructed to require students to utilize all tools, instruments, and machines for analysis of all aspects of service and repair. The procedures employed in service and repair will be the same as expected in the industry. Each student will be expected to show individual ability and initiative in determining the troubled area of heavy equipment. Prerequisite: HEV 1103.

HEV-1107 Power Train Systems **(4-0-6-6)**

This course is designed to go into all types of power trains in heavy equipment. A study of the theory of power trains will be presented and applications of maintenance and repair will give each student an opportunity to review various types of power trains. Actual experience in the operation of power trains will be required to give each student an overview of a variety of experiences. Special tools and instruments used in maintenance and repair of power trains will be presented. Prerequisites: HEV 1103.

HMA-101 Hospitality Orientation **(3-0-0-3)**

Traces the growth and development of the hospitality industry from early inns to modern day food and lodging complexes that have become an integral part of our society. This course offers the student an overview of the hospitality industry; its size and scope; nature and scope of the market it serves; types of establishments it includes; how hotels and restaurants are organized; purposes and functions of each department within the hospitality operation. Emphasis will be placed on giving the student an insight into the problems in the hospitality industry and the importance of sound relationships with both the public and other operations within the industry. Prerequisite: None.

HMA-104 Food Purchasing I **(3-0-0-3)**

The student studies the functions and administrative operation of the food buyer's department in hotels and restaurants. Various methods for purchasing including market studies, comparative price buying, yields, and quality control will be discussed. A study of the following food items will be made and specifications will be developed: fresh fruits and vegetables, processed fruits and vegetables, cereal products, beverages, and miscellaneous groceries. Prerequisites: None.

***HMA-106 Front Office Procedures/Hotel Accounting** **(5-2-0-6)**

This course will present a study of the various aspects of the front office of the hotel and motor lodge. This will include the procedures in registration, night auditing, transcript preparation, daily reports, and accounting for all guests on the premises. A study of all office machines used in the field will be presented as well as standard check-in and check-out procedures; telephone requirements and reservations will be presented. A great deal of emphasis will be placed upon the crucial human and public relations responsibilities of the front office staff.

This course will also present a study of all forms, practices, and procedures required in accounting systems in hotels. Prerequisite: BUS 120.

HMA-108 Food Cost Control **(3-0-0-3)**

The student will be instructed in food cost accounting techniques as they relate to purchasing, receiving, storing, issuing, production, revenue, and inventory controls. Through use of case studies which will include menu and portion costing, food cost percentages, cost control records forecasts, and sales histories, the student will utilize these techniques in the actual operational sense. The student will be given an understanding of the importance of food cost control and the various techniques which relate to it as management tools. Prerequisite: MAT 110.

HMA-109 Food Purchasing II **(3-0-0-3)**

The student studies receiving and issuing techniques, storeroom operation, requisitioning, and record keeping as it relates to a foodservice operation. Government grading of food items and price buying will be discussed. Importance of analysis of end use of a food product as it relates to the quality of the food purchased will be shown. A study of the following food items will be made and specifications will be developed: milk and dairy products, fats and oils, poultry, eggs, and meats (beef, pork, veal, and lamb). Prerequisite: HMA 104.

HMA-110 Supervised Work Experience **(2-0-40-6)**

This course is planned to give the student an opportunity to work in the industry and gain practical experience. Jobs will be within the local economy. *Students will return to campus for periodic seminars.* Prerequisite: Successful completion of major courses through 3rd quarter or the Department Chairperson's approval.

HMA-204 Hotel Management Information Systems **(2-2-0-3)**

The evolution and application of computerized technology in general is discussed prior to the illustration and study of specific hotel computer-system modules presently at work or soon to be introduced into innkeeping.

As an aid to better learning and to promote "computer literacy", the BASIC computer language will be introduced with the student writing and "running" hotel-applicable software modules in the department's own unique computer laboratory. Prerequisite: First year curriculum.

HMA-206 Business Management in Hotels and Restaurants (3-0-0-3)

A brief trip into the various areas in which an executive functions in the Hospitality Industry. Approaching the responsibilities of management with maturity, developing the organization, exploring the decision making processes and the importance of accounting and controls are covered. The role and applications of the computer as a management tool in hotels and restaurants as well as the access and utilization of in house and external data bases will be experienced first hand in the department's computer lab. Prerequisite: First year curriculum or departmental approval.

HMA-207 Laws of Innkeeping (5-0-0-5)

Presents a highly technical subject in non-technical language. The course is designed to help the student understand the attitudes of the courts when an innkeeper is involved in litigation, and to create an awareness of the many responsibilities which the law imposes upon the innkeeper. The emphasis in this course is upon the reason for the rules of law and the values of interests involved. The object is to give the student an understanding and a sense of balance rather than a series of specialized rules to memorize. Prerequisite: BUS 115.

HMA-208 Supervisory Housekeeping I (3-2-0-4)

Provides the student with a basic foundation in the scope, responsibilities, language, materials and problems of hotel housekeeping.

Special emphasis will be placed upon the criteria for the proper selection of guest room equipment and supplies as well as the techniques, tools and chemicals required to maintain both public and guest spaces in the high degree of cleanliness and readiness necessary for the comfort and safety of hotel patrons and guests. Practical application will be provided in the college's own Mountain Tech Lodge. Prerequisite: None.

HMA-209 Personnel Management in the Hospitality Industry (3-0-0-3)

Gives to the student an acute awareness of the problems in an industry which offers service to the public performed by many employees; the problems of labor supply, selection, training, promotion, and morale. This course is really a compilation of the principles and practices already found to be of great value in hotels and restaurants in the management of employees. Emphasis is placed upon the general principles which may be applied in any size operation, from department heads to general manager of a large hotel. The needs and purposes of the employer, the welfare and desires of the employees and the interest and demands of the community will be taken into account as they influence employer-employee relations. Prerequisite: First Year Curriculum.

HMA-210 Supervisory Housekeeping II (0-2-0-1)

Using the college's ongoing lodge operation as a practical laboratory, this is a "real-time" experiential lab, designed to develop and hone the students' housekeeping abilities, skills, and management concepts. Specialized and individualized projects will be assigned by the faculty. Prerequisite: HMA 208.

HMA-211 Financial Ingredient in Foodservice Management (3-2-0-4)

Financial controls based on good accounting data are indispensable to the success of any business enterprise. This course reviews the history of the industry and finance, background of double entry bookkeeping, and how it is applied in actual practice. Demonstrates the use of accounting techniques in analyzing business performance, budgeting, cost control, and profit planning. Prerequisite: First year curriculum or Department Approval.

HMA-212 Sales Promotion and Advertising in Hotels and Restaurants (2-2-0-3)

This course is designed to present a study of the advertising media used by hotels and restaurants. Methods and practices used to establish a favorable image and gaining public recognition will be presented. The civic responsibilities of the Hospitality Industry and social activities, such as conventions and special functions will be considered. Promotional projects used to advertise services will be carried out. Prerequisites: First Year Curriculum.

HMA-213 Food Service Sanitation **(3-0-0-3)**

Sanitation is a subject of significance for the Foodservice Industry. This course deals with the basic facts of sanitation and how to prevent food-borne illness through an understanding and implementation of the principles of food protection. The N.I.F.I. (National Institute for the Foodservice Industry) Certificate will be granted upon successful completion of this course. Prerequisites: First Year Curriculum or Departmental Approval.

HMA-214 Layout and Design I **(1-2-0-2)**

Students apply knowledge from previous courses and practical life experiences in this precursor for Engineering Layout and Design II. Using given parameters in an "honors" environment, students develop a basic menu concept and pattern, recipe index, functionally based equipment analysis, and specifications manual. Prerequisite: First year curriculum or Departmental Approval.

HMA-215 Beverage Cost Control **(3-0-3-4)**

Offers a systematic study of the principles of effective beverage cost controls. This covers the entire beverage operation from purchasing, receiving and storage, the preparation, service, and most important, sales and inventory accountability. Particular emphasis will be placed on calculating beverage costs and establishing standards of preparation and service. The course will concisely sum up the knowledge and principles of beverage cost controls that have taken operators years to learn by practical experience. In order to demonstrate how the principles are applied in a practical situation, a complete beverage department and cost accounting system has been created. Prerequisite: First Year Curriculum.

HMA-216 Layout and Design II **(2-4-0-4)**

In this continuation of HRM 214, students use established procedures to design and layout the kitchen, dining room, function room, lobby area, and representative sleeping rooms of a typical motor hotel operation using ¼" scale drawings. The student prepares a comprehensive oral defense of the projects of both courses. Prerequisite: HMA 214.

HMA-217 Supervisory Housekeeping III **(0-2-0-1)**

This course is a continuation of HMA 210. Prerequisite: HMA 210.

IFM-100 Computer Keyboarding **(1-2-2)**

A computer-based course to develop touch keyboarding skill in entering data at the computer workstation. Alpha, numeric, and symbol keys are taught stressing accuracy. Speed is given emphasis; 25 WAM is the minimum competency level. Basic formatting of business documents is introduced. Prerequisite: None.

IFM-101 Basic Typewriting **(2-3-3)**

A competency-based introduction to typewriting fundamentals, (keyboard control and techniques), correspondence, and centering applications. Prerequisite: None.

IFM-103 Advanced Typewriting **(2-3-3)**

A concentrated effort to continue speed building while more strongly stressing accuracy and introducing correction skills. Production work continues on letters, manuscripts and reports, and form typing is introduced. Speed requirement: 32 wam for five minutes. Prerequisite: IFM 101 or equivalent.

IFM-105 Expert Typewriting **(2-3-3)**

An emphasized development of sustained production on various types of typewriting problems and perfected learning of the mechanism, operation, and care of the typewriter. The speed-building emphasis continues with increased attention to accuracy. Speed requirements 49 wam for five minutes. Prerequisite: IFM 103 or equivalent.

IFM 108 Phonics for Shorthand **(2-0-2)**

Provides practice in auditory-visual association of sound and symbol, a requirement for word analysis necessary for success in shorthand. Sight and sound drills stress consonants, consonant blends and digraphs, vowels, vowel digraphs, dipthongs,and syllabication. Prerequisite: None.

IFM-110 Shorthand Refresher **(3-2-4)**

This course is designed as a shorthand dictation speed-building program for those who have previously studied shorthand theory. (No specific shorthand system is a prerequisite.) The speed requirement is determined by student need; terminal objectives are set by each individual. Takes must be transcribed at the typewriter; 95 percent accuracy is required with deductions for misspelled words, punctuation errors, and uncorrected typographical errors. Prerequisites: IFM 112 or equivalent; IFM 101 or 32 WAM typing speed.

IFM-112 Shorthand I for Information Processing **(3-2-4)**

A study of Gregg Shorthand as an equal component with Information Age technologies in effective communication for greater office productivity. Concomitant development of theory and dictation skills distinguishes this study from traditional shorthand study and compresses the time frame needed for this skill development. The strong development of liberal arts skills is a major concurrent goal. Prerequisite: Typing skill at 32 WAM within 4 errors.

IFM-113 Shorthand II for Information Processing **(3-2-4)**

A continuing study of Gregg Shorthand as an equal component with Information Age technologies in effective communication for greater office productivity. While concomitant skills development is continued, the emphasis is shifted to the output—mailable formats. Prerequisite: IFM 112.

IFM-114 Shorthand III for Information Processing **(3-2-4)**

In the third quarter of Gregg Shorthand, the ultimate goal—transcribed notes in usable formats—is perfected. While letters and memorandums are included, the productive employment of shorthand notes for recording instructions and telephone messages, notetaking, and as word processing input are included to prepare the student for productive use of shorthand in the electronic office. Prerequisite: IFM 113.

IFM-115 Word Processing Concepts **(3-0-3)**

A study of the creation and processing of information documents in a word processing environment. Included are the concepts of system configuration, document reproduction, communication, distribution, storage and retrieval, document protection, and the relationship of the office employee to the word processing environment. Prerequisite: None.

IFM-117 Word Processing **(2-3-3)**

Preparation for use of word processing equipment in the office, including encounters with the resulting requirements for improved productivity, employment of written communication skills, and editing and proofreading. Information is processed on automated word processing equipment using a full range of equipment function capabilities. Prerequisite: IFM 101 or measured typing skill of 25 WAM within four errors for five minutes.

IFM-120 Personal Development **(3-0-3)**

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement. Prerequisite: None.

IFM-125 Text Editing Skills **(3-0-3)**

A course designed with emphasis placed upon punctuation skill building, spelling, and transcription on a word processor. Prerequisites: ENG 101, IFM 101.

IFM-200 Microcomputer Operations **(2-2-3)**

This course is designed to introduce students to selected hardware and software concepts and applications of microcomputers. In developing skill and knowledge of the various processing features of microcomputer systems, practical applications in programming and word processing are emphasized. The study includes system configurations, hardware, and design topics. Prerequisite: IFM 100 or IFM 101.

IFM-201 Information Resource Management (3-0-3)

A study of the practical application, systematic analysis, and scientific control of business records from their creation through processing, maintenance, protection, and final disposition; the study of manual and automated systems is included. Prerequisite: None.

IFM-204 Dictation and Transcription (3-2-4)

The student develops accuracy, speed and a vocabulary that will meet the requirements of business and professional offices. Prerequisite: IFM 114.

IFM-205 Professional Typewriting (2-3-3)

Job-performance competency is sought through attention to accuracy and correction techniques and integration of prior speed building and previously-learned English. It also includes composition skills related to production work from rough drafts and simulated dictation copy. Speed requirement: 60 words a minute for five minutes. Prerequisite: IFM 105 or equivalent.

***IFM-208 Secretarial Procedures & Administration I (3-2-4)**

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: receptionist's duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims. Prerequisites: IFM 201, IFM 114, IFM 117.

***IFM-209 Secretarial Procedures & Administration II (3-2-4)**

A continuation of the work encountered in the first course. Emphasis is placed on the student's work on individual problems and specialized work projects. Prerequisites: IFM 208.

IFM-220 Office Skills Reinforcement (2-3-3)

This course is designed as an intensive skills reinforcement to build speed and accuracy in both shorthand and typewriting. Speed requirements and terminal objectives are individualized to meet the needs of each student. Prerequisites: IFM 105, IFM 204.

IFM-230 Administrative Services Management (3-0-3)

Emphasis is on building good human relationships in management. The student will be involved in role playing, group consensus problem-solving sessions and case study analysis. Prerequisite: None.

IFM-250 Computer Office Support Systems (2-2-3)

Provides the student with experience in interactive computing between a PC workstation and a mainframe computer as well as the exchange of documents with other users in the system through: automated mail, directory services, local messaging, and calendaring. Database maintenance and user security will be stressed. Prerequisites: IFM 117, IFM 200.

ISC-102 Industrial Safety (3-0-3)

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau, Occupational Safety & Health Act (OSHA); and advertising and promoting a good safety and fire prevention program. Prerequisite: None.

ISC-202 Quality Control (3-2-4)

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance. Prerequisite: None.

ISC-203 Time and Motion Study **(3-2-4)**

Principles of motion economy, tools for motion study, time study methods and practice; standard data and formula construction; use of methods-time measurements as a substitute for time studies. Prerequisite: None.

ISC-209 Plant Layout **(3-2-4)**

A practical study of factory planning and emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and material in a manufacturing operation. Prerequisite: Approval of Faculty Advisor.

ISC-211 Work Measurement **(3-2-4)**

Principles of work simplification including administration of job methods improvement, motion study fundamentals and time study techniques. Use of flow process charts; multiple activity charts, operation charts, flow diagrams and methods evaluation. Prerequisite: ISC 203.

MAT-090 Guided Mathematics I **(5-0-5)**

Topics include manipulation of whole numbers, decimals, fractions, and percentages with practical problems illustrating each operation. In addition, the relationships between percentages, fractions, and decimals are covered. Prerequisite: None.

MAT-091 Guided Mathematics II—Practical Geometry **(5-0-5)**

Introduction to basic geometry including areas of plane figures, angles, volume, Pythagorean Theorem and surface areas. Also included is an introduction to the metric system. Prerequisite: None.

MAT-093 Guided Algebra I **(3-0-3)**

Topics include basic concepts and operations of algebra; algebraic symbols, signed numbers, equations of first degree, with practical applications. Also included are addition, subtraction, multiplication and division of polynomials, exponents and factoring of polynomials with quadratic equations solved by factoring, systems of linear equations, and operations with radicals. Prerequisite: MAT 090 or equivalent.

MAT-094 Guided Algebra II **(3-0-3)**

This course covers systems of first degree equations in two variables, graphing equations in rectangular coordinate system, polynomial fractions, irrational numbers, solving fractional and quadratic equations with rational and irrational roots and complex numbers and inequalities. Equivalent to Algebra II. Prerequisite: MAT 093 or equivalent.

MAT-100 Basic Mathematics **(5-0-5)**

Introduction to mathematics including operations with numbers, fractions, percent, dimensional analysis, signed numbers, elementary algebra, linear equations, basic plane and solid geometry with emphasis on applications. Prerequisite: entrance requirements.

MAT-101 Algebra and Trigonometry I **(5-0-5)**

Number systems of various bases are introduced. Fundamental algebra operations, and rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisites: MAT 100.

MAT-102 Algebra and Trigonometry II **(5-0-5)**

A continuation of MAT 101. Advanced algebraic and trigonometric topics include quadratics, logarithms, determinants, matrices, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. Prerequisite: MAT 101.

MAT-103 Analytical Geometry and Calculus I **(5-0-5)**

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Application of these concepts to practical situations are stressed. Prerequisite: MAT 102.

MAT-105 Introduction to Algebra **(3-0-3)**

This course stresses algebraic fundamentals including algebraic terms and laws, solution of first degree equations, and statement problems. Fundamental statistical methods will be introduced. Prerequisite: None.

MAT-106 Introduction to Mathematics **(3-0-3)**

This course embodies an introduction to mathematics including operation with whole numbers, fractions, per cents, metric terminology, elementary algebra, and statistics with emphasis on practical application involved in the Allied Health field. Prerequisites: None.

MAT-110 General College Mathematics **(5-0-5)**

This course is designed to provide a review of the fundamentals of arithmetic. Topics covered will include operations with real numbers, percentages and applications which students encounter in everyday life. Prerequisite: None.

MAT-112 Mathematics of Finance **(3-2-4)**

This course consists of practical application of business financial transactions involving analysis of statements, interest, present value, yield, discount, compound interest, annuities, extinction of debt and depreciation. Use of modern calculating equipment will be employed. Prerequisites: MAT 105 or MAT 100.

MAT-121 Numbering Systems and Boolean Algebra **(3-0-3)**

It is a study of various numbering systems with emphasis on the binary, octal and hexadecimal as related to one another, the decimal system, and computers; conversions from one system to another; arithmetic operations in non-decimal systems; elementary logic; and Boolean algebra. Prerequisite: None.

MAT-201 Calculus II **(5-0-5)**

A continuation of MAT 103. More advanced concepts of differentiation and integration are considered. Included are derivatives of the trigonometric function, exponential and logarithmic differentiation and integration, advanced integration technique, polar equations, parametric equations. Prerequisite: MAT 103.

MAT-204 Applied Mathematics **(5-0-5)**

A study of geometric principles and trigonometry as relate to engineering and related shop applications. Emphasis will be placed on practical application of geometric theorems, right triangle and oblique triangle trigonometry and dimensional analysis. Prerequisite: MAT 102.

MAT-214 Statistics **(5-0-5)**

This is an introduction to statistics with emphasis on data anlaysis including frequency distributions, measures of location and variation; and probability. Practical problems support the theory. Prerequisite: MAT 100 or MAT 105.

MAT-1101 Fundamentals of Mathematics **(5-0-0-5)**

Analysis of Basic Operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Introduction to algebra used in trades. Practicable applications. Prerequisite: None.

MAT-1103 Geometry **(3-0-0-3)**

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction, areas and volumes of solids. Geometric principles are applied to shop operations. Prerequisite: MAT 1101.

MAT-1104 Trigonometry **(3-0-0-3)**

Practical problems in Geometry relating to machine shop are reviewed. Trigonometric ratios, solving problems with right triangles and solution of practical problems are covered in this course. Solution of oblique triangles will be introduced. Prerequisite: MAT 1103.

MAT-1123 Machinist Mathematics **(3-0-0-3)**

Introduces tapers and wedgers, sine bar, dovetails, threads, angle cuts, hole-circle spacing, gears, and indexing with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems. Prerequisite: MAT 1104.

MAT-1203 Trigonometry **(3-0-0-3)**

A basic review of mathematics will form a foundation for a study of trigonometry of right triangles, oblique triangles, and dimensional analysis. Applications to typical problems found in the tool and die shop will be presented and solutions will be found by using mathematics. Prerequisite: MAT 1123.

MAT-1204 Compound Angles **(5-0-0-5)**

The application of trigonometry and geometry is presented to solve compound angle problems. This course will use as many practical problems as possible to enable the student to work with typical problems. Prerequisite: MAT 1203.

***MEC-101 Machine Processes** **(2-4-4)**

A course to acquaint the student with basic machine tools of industry through lectures, demonstrations, and hands-on practice. It will include the study of safety practices; measuring instruments; characteristics of basic machine tools, materials, and cutting tools; and actual experience on lathe, drill press, milling machines, shaper, and grinder. Prerequisite: None.

***MEC-105 Statics** **(5-0-5)**

Concepts and basic principles of statics. Parallel concurrent, and non-concurrent force systems in coplanar and noncoplanar situations. Concepts of friction. Prerequisites: MAT 102, PHY 102.

***MEC-111 Manufacturing Processes** **(3-3-4)**

An introduction to the field of manufacturing processes to include material properties, metal stamping and drawing, casting, forging, die casting, metal joining, heat treating, plastic processing adhesives, metal finishing, and protective coatings. Field trips. Prerequisite: None.

***MEC-205 Strength of Materials** **(5-0-5)**

Study of the basic principles by which stresses and strains are induced in beams, members and structures by imposed loads. Analyses of stresses are made as applied to beams, columns, thin-walled cylinders, spheres, riveted and welded joints, and machine components. Prerequisites: MEC 105, MAT 102.

MEC-206 Dynamics **(3-0-3)**

Study of change of position or motion as it affects machines and their mechanical components. The subjects of mathematical vectors and kinematics used for design of mechanisms and cams, etc., are introduced. Dynamics formulae are presented and explained. Work problems are provided. Prerequisites: MAT 103, and MEC 205.

MEC-208 Machine Design I **(4-0-4)**

Study of factors affecting the design of machine elements. Empirical and theoretical equations, practical considerations, and procedures of designing are included. Students are given practice in applying knowledge of strength and properties of materials, manufacturing processes, economics of production, safety, and elements of good design through problem assignments. Prerequisite: MEC 205.

MEC-209 Machine Design II **(4-0-4)**

A survey course with the selection of components in mechanical design, such as power trains, gearing, bearings, shafts, keys, springs, belts, couplings, clutches, brakes, etc., through the use of design information, standards, handbooks, etc. Prerequisite: MEC 208.

MEC-210 Physical Metallurgy **(3-3-4)**

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys. Atomic structure and its effect on physical properties. Solid (crystalline) structures, methods of designing crystal planes, liquid and vapor phases, phase diagrams, and alloy systems. Laboratory work to include useful field trips to local industries. Basic plastics will also be covered. Prerequisites: None.

MEC-212 Practical Automation **(4-4-6)**

An introductory course in the uses, means, and economics of automations as practiced by industry. Traditional automation will be covered as well as robotics. Lab work will include robotic programming and field trips to local industry to observe automated equipment in operation. Prerequisite: None.

MEC-213 Machine Design **(2-2-3)**

Study of factors affecting the design and selection of machine elements and components. Applications of principles of mechanics, properties of materials, and manufacturing processes fundamental to the design of machine components will be included. Prerequisite: MEC 205.

MEC-220 Power Systems **(3-2-4)**

Survey of energy conversion systems such as the internal combustion engine, power plant, gas turbine, and refrigerator. Basic thermodynamic principles and laws introduced. Prerequisites: PHY 102, MAT 103.

MEC-235 Hydraulics and Pneumatics **(3-3-4)**

The basic theories of hydrostatic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, plumbing, filtration, pumps, valves, accumulators and reservoirs. Laboratory work to include field trips to local industries. Prerequisite: PHY 102.

MEC-1101 Elementary Hydraulic Principles **(2-3-0-3)**

Students will be introduced to the principles of hydraulic systems as they apply in the heavy equipment area. The theory of hydraulic systems must be understood thoroughly before the students can progress into actual work on hydraulic systems. Various aspects of heavy equipment will be used to demonstrate these principles and theories. Prerequisite: None.

MEC-1115 Treatment of Ferrous & Non-Ferrous Metals **(1-0-3-2)**

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study. Prerequisite: None.

MEC-1124 Metallurgy **(3-0-0-3)**

An introductory course in metallurgy, a basic study of properties of metals and alloys and their purpose, standards and classification, heat treatment, and trouble shooting. A thorough knowledge of the effects of heating and cooling is very essential to the welding student. Prerequisite: None.

MEC-1203 Metallurgy **(3-0-0-3)**

This is a study of a special group of steels used by the tool and die industry. Students are concerned with the selection, machining, and heat treating of these steels. Troubleshooting to find the reason for possible failure of the steel and the remedy required will be an important part of this course. Prerequisite: None.

MEC-1209 Hydraulics and Pneumatics **(3-0-0-3)**

A basic study of the principles of power hydraulics. Component parts such as reservoirs, strainers, filters, piping and fittings, motors, pumps, and valves will be throughly studied. Practical circuits and systems will be covered especially as they are used in the tool and die industry. Prerequisite: None.

***MES-1101 Machine Shop I** **(3-0-12-7)**

An introduction to the machinist trade and the potential it holds for craftsmen. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.

***MES-1102 Machine Shop II** **(3-0-12-7)**

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations of the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course. Prerequisite: MES 1101.

***MES-1103 Machine Shop III** **(3-0-12-7)**

Advanced work in the engineer lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder. Prerequisite: MES 1102.

***MES-1104 Machine Shop IV** **(3-0-12-7)**

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry. Prerequisite: MES 1103.

MES-1106 Introduction to Numerical Control **(3-3-0-4)**

Introduction to Numerical Control and Computer Numerical Control Machine tools and the potential for those working in machine shops includes applications of numerical control dimensioning systems and axis designation, tape codes and formats, part programming fundamentals, and advance computer assisted programming. Prerequisite: MAT 1104 or proficiency in geometry and trigonometry.

***MES-1112 Machine Shop Processes** **(1-3-0-2)**

An introduction to machine shop dealing with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.

***MLT-101 Clinical Experience I** **(4-0-6-6)**

An introduction to clinical laboratory techniques and the functions of the medical laboratory technician. The medical laboratory technician's relationship to the patient and other allied health personnel is defined. Methods and theory of specimen collection are introduced. Prerequisites: None.

MLT-105 Hematology I **(3-0-0-3)**

Basic theory in clinical hematology including hematopoeisis, principles of cell counting, hemoglobinometry, introduction to anemias, and morphology of normal cells. Prerequisites: BIO 101, MLT 101.

MLT-106 Urinalysis **(1-2-0-2)**

The study of the formation of urine and urinalysis. The importance of the role urinalysis plays in the diagnosis of disease is emphasized. Prerequisite: BIO 102.

MLT-107 Clinical Chemistry I **(3-0-0-3)**

A study of the biochemical processes involved in human metabolism, particularly carbohydrates and proteins. The study involves emphasis on methodologies used in the clinical chemistry laboratory. Prerequisites: BIO 102, CHM 103.

***MLT-108 Clinical Experience II** **(2-0-6-4)**

An overview of each clinical laboratory area is presented with an emphasis on performing routine venipunctures. Prerequisite: MLT 101.

MLT-112 Clinical Chemistry II **(1-2-0-2)**

A continuation of MLT 107, Clinical Chemistry I, concentrating on electrolytes, blood gases, enzymes, and hormones. Prerequisite: MLT 107.

***MLT-113 Clinical Experience III** **(0-0-9-3)**

A continuation of performance of venipunctures with the addition of special blood collection procedures. Prerequisite: MLT 108.

MLT-114 Immunohematology I **(3-2-0-4)**

Principles and theories of immunology and immunohematology including serology, blood group antigens and antibodies. Prerequisite: BIO 102.

MLT-115 Microbiology I **(1-2-0-2)**

An introduction to the routine techniques of clinical microbiology and the study of gram positive and gram negative cocci. Prerequisite: BIO 101.

MLT-116 Microbiology II **(1-2-0-2)**

A study of glucose fermenting and glucose nonfermenting gram negative bacilli and the various techniques of antimicrobial susceptibility testing. Prerequisite: MLT 115.

MLT-118 Immunohematology II **(1-2-0-2)**

A continuation of Immunohematology I with an introduction into the selection and processing of donors, preparation and use of blood and blood components, special immunohematology conditions and methodologies. Prerequisite: MLT 114.

***MLT-119 Clinical Experience IV** **(0-0-6-2)**

A continuation of performance of venipunctures, special blood collection with an emphasis on the pediatric patient. Prerequisite: MLT 113.

MLT-121 Hematology II **(1-4-0-3)**

A continuation of Hematology I with an emphasis on cell identification. Basic theory and methodoligies in hemostasis are introduced. Abnormal cell identification is stressed. Prerequisite: MLT 105.

MLT-201 Microbiology III **(3-0-0-3)**

A study of the gram positive bacilli, anaerobic bacteria, mycobacteria, fungi and the various microbiological techniques necessary for their identification. Prerequisite: MLT 116.

***MLT-202 Clinical Experience V** **(0-0-27-9)**

Practical application of laboratory skills during supervised rotations through clinical hematology. Prerequisite: MLT 119.

MLT-205 Hematology III **(1-2-0-2)**

A continuation of MLT 121 with an emphasis on special hematological procedures through the use of case studies. Prerequisite: MLT 121.

***MLT-206 Clinical Experience VI** **(0-0-27-9)**

Practical application of laboratory skills during supervised rotations through clinical chemistry. Prerequisite: MLT 202.

***MLT-209 Clinical Experience VII** **(0-0-27-9)**

Practical application of laboratory skills during supervised rotations through clinical microbiology. Prerequisite: MLT 206.

***MLT-211 Instrumentation** **(0-2-0-1)**

A study of the operating principles and methodologies of laboratory instruments including routine maintenance and quality control. Field trips to various health facilities and industries will be included. Prerequisite: MLT 112.

***MLT-212 Clinical Experience VIII** **(0-0-27-9)**

Practical application of laboratory skills during supervised notation through blood bank and serology in the clinical laboratory. Prerequisite: MLT 209.

MLT-220 Parasitology **(1-2-0-2)**

A study of human parasites. Practice in techniques used in identifying parasites in feces and other body specimens. Prerequisite: MLT 115.

MRP-101 Manufacturing Resources Planning I **(4-0-4)**

The components of a manufacturing system and their interrelationships are surveyed. The course will review planning for made-to-order, made-to-stock, and engineered products; will cover the preparation and maintenance of a master production schedule; will survey capacity management, shop floor control, purchasing, forecasting, inventory management, and materials requirements planning. The course will discuss the use of the computer in these functions. MRP terminology is stressed. Prerequisite: None.

MRP-102 Manufacturing Resources Planning II **(4-0-4)**

This course is a continuation of MRP 101. The learner will be introduced to applications of MRP occurring in local industry and in models perfected by the industry. Prerequisite: MRP 101.

MRP-103 Materials Requirements Planning **(4-0-4)**

This course covers the fundamental concepts and principles in time-phased material requirements planning. The key functions of inventory management, capacity requirements determination, and priority planning are stressed. The techniques for developing a master schedule and the role of the forecast will be covered in detail. A computer based model will be available. Upon successful completion of the course, the student is encouraged to take the APICS test module on Materials Requirements Planning. Prerequisite: MRP 102.

MRP-105 Inventory Management **(4-0-4)**

The course will encompass the principles, concepts, and techniques for deciding what to order, how much to order, when to order, and how and where to store. Major course objectives will cover the proper balance to maintain to achieve the desired level of customer service, investment in inventories, and proper timing in the management and purchasing requirements. Upon successful completion of the course, the student is encouraged to take the APICS test module on Inventory Management. Prerequisite: MRP 102.

MRP-201 Capacity Management **(4-0-4)**

The course will cover the function of establishing, measuring, monitoring, and adjusting limits or levels of capacity in order to execute all manufacturing schedules. The process of determining the necessary people, machines, and physical resources to meet the production objectives of the firm will also be covered. Long-range, medium-range, and short-range time horizons will be identified. Upon successful completion of the course, the student is encouraged to take the APICS test module on Capacity Management. Prerequisite: MRP 205.

MRP-203 Master Planning **(5-0-5)**

The course is divided into two major sections: forecasting and master production scheduling. Terminology is stressed throughout the course. The techniques used in and principles of forecasting will be presented. Master production scheduling activities of demand management, production planning, final assembly scheduling, and master production scheduling will be covered. Upon successful completion of the course, the student is encouraged to take the APICS test module on Master Planning. Prerequisite: MRP 102.

MRP-205 Methods, Standards & Routings **(4-0-4)**

This course will present a systematic, practical, and yet scientifically correct treatment of work methods, standards, and routings used in today's manufacturing concerns. Prerequisite: MRP 102.

MRP-207 Shop Floor Control **(4-0-4)**

The course covers the most important principles and techniques of a shop floor control. The student will have a working knowledge of the approaches used by managers to plan, schedule, control, and evaluate the effectiveness of shop production operation. The course covers process plants, volume production lines, and industries that operate a shop floor control environment. Upon successful completion of the course, the student is encouraged to take the APICS test module on Production Activity Control. Prerequisite: MRP 205.

MRP-209 Factory Layout and Design **(3-0-3)**

A practical study of factory planning with emphasis on the most efficient arrangement of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money, and materials in a manufacturing operation. Prerequisite: None.

MRP-211 Purchasing **(4-0-4)**

The learner will be able to accomplish entry-level functions in a purchasing department. The course introduces the purchasing role in an organization along with techniques of vendor selection and development: buying from the right source, at the right time, and in the right quantity. Prerequisite: MRP 102.

MRP-216 Advanced Projects **(3-0-3)**

The student will be assigned problems and the responsibility for documenting current research. A bibliography including texts, journals, and discussions with practitioners must be developed. Project progress will be critiqued weekly by the class and instructor. Prerequisite: Satisfactory completion of all previous course work.

MRP-217 Certification Review **(2-2-3)**

The courses designed to prepare the students for APICS certification provide the basis to review for subsequent testing. A certified instructor will present the primary contents of each test module. Prerequisite: MRP 103, 105, 203, 205, 207.

NUR-101 Fundamentals of Nursing I **(5-4-0-7)**

This course provides an introduction to basic concepts of health and the role of the Associate Degree Nurse as a member of the contemporary health team. Emphasis is placed upon basic human needs and biopsychosocial adaptations to illness. The nursing process is introduced as a means of planning and implementing care. Medical terminology is integrated throughout. Concurrent laboratory experience provides the opportunity for developing competencies in basic nursing skills. Prerequisite: None.

***NUR-103 Fundamentals of Nursing II** **(5-0-9-8)**

This course centers around the principles of homeostasis and the concept of adaptation. The student learns about broad groups of therapeutic agents, gains proficiency in dosage calculations and learns principles of administering therapeutic agents by various routes to adult and pediatric clients.

Also included is the study of the body's fluid distribution and normal ranges and functions of the various electrolytes. Hospital and laboratory experience provide the opportunity for the student to implement basic nursing care, administer medications and monitor intravenous fluid administration. Prerequisite: NUR 101, BIO 101, CHM 101, NUT 101, and CPR Certification.

NUR-105 Fundamentals of Nursing III **(5-0-9-8)**

This course includes basic physical assessment of adult and pediatric clients with emphasis on normal findings. Consideration is given to client's inability to adapt in various pathologies and processes to a study of pre and post-operative care, communicable diseases, neoplasms, gastro- and blood dyscrasias. In the laboratory the student learns basic techniques for physical assessment, gastro-intestinal intubation, oxygen therapy and venipuncture. In the hospital setting, the student adapts care to meet needs of the individual clients with common health problems. Prerequisite: BIO 102, NUR 103.

NUR-125 Nursing Procedures **(2-0-0-2)**

This course acquaints the student with nursing procedures and techniques used in the general care of the patient with emphasis on the role of the radiologic technologist in various nursing situations. Prerequisites: None.

***NUR-206 Psychiatric Nursing** **(4-0-6-6)**

In this course, the fundamental dynamic concepts of the mind and mental health, the agencies of the mind, and personality adjustment mechanisms are reviewed as a background for the study of the mental disorders—neuroses, psychoses, and personality disorders. Emphasis is placed upon symptomatology and treatment and especially upon the related nursing care. Principles of a therapeutic nurse-patient relationship are learned, and an opportunity to apply them is provided in a local psychiatric hospital. Prerequisites: PSY 203, NUR 105, PSY 105.

NUR-207 Maternity Nursing **(4-0-6-6)**

Maternity nursing centers on the needs of mothers and newborn infants during the reproductive experience. The student is assisted in viewing these individuals within the structure of the family and appreciating the meaning of reproduction of the family.

Subject material focuses on the normal aspects of the childbearing process with brief consideration given to the major complications of the maternity cycle and the common deviations of the newborn. Throughout the course of study the student is assisted in the acquisition of knowledge and nursing skills necessary for the promotion of comfort, health and safety of the mother and her infant. Prerequisites: BIO 103, NUR 105, PSY 105.

***NUR-210 Medical Surgical Nursing I** **(7-0-15-12)**

This course is designed to guide the student in acquiring knowledge and skills in order to meet the physical, psychological and social needs of the adult and pediatric client with respiratory and cardiovascular problems. The student utilizes the nursing process in caring for clients with respiratory and cardiovascular problems in various clinical settings. Prerequisites: NUR 206, NUR 207.

***NUR-211 Nursing Seminar I** **(3-0-0-3)**

Attention is given to the history and organizational structure of nursing and to the development of the new graduate's responsibilities and opportunities in the area of employment, involvement in continuing education, and the relationship of the ADN graduate to the health team members. Prerequisite: NUR 210.

***NUR-212 Nursing in Physical and Mental Illness II** **(7-0-15-12)**

This course is designed to guide the student in acquiring knowledge and skills to meet the physical, psychological and social needs of the adult and pediatric clients with problems involving metabolic processes from the availability of nutrients to the excretion of waste materials. Through selected adult and pediatric experience, the student is given the opportunity to utilize the nursing process in implementing care. Prerequisite: NUR 210.

***NUR-213 Nursing Seminar II** **(2-0-0-2)**

The purpose of this course of study is to help students utilize basic principles of management in implementing the nursing process for individuals and groups. The leadership role and various methods of managing client care are emphasized. Prerequisite: NUR 212.

***NUR-214 Medical Surgical Nursing III** **(7-0-18-13)**

This course is designed to assist the student in acquiring knowledge and skills in order to meet the physical, social and psychological needs of adult and pediatric clients with sensorineural and musculoskeletal dysfunction. Clinical experiences provide an opportunity for the students to utilize concurrent and previously acquired knowledge and skills in managing care for groups of clients. Prerequisite: NUR 212.

NUT-101 Nutrition **(3-0-0-3)**

A study of basic nutritional principles and their relationship to human need and adaptation. The course begins with fundamental components of food and their relationship to normal basic needs. It continues with meeting nutritional needs of individuals at various stages of the life cycle and the individual response to food, both physiological and psychological as altered by the disease state. Prerequisites: None.

NUT-202 Nutrition **(3-0-0-3)**

A study of basic nutrition and dietetics related to personal and community health. Prerequisite: CHM 101.

OTC-100 Spelling and Punctuation Study **(3-0-3)**

A course designed to help the student overcome spelling difficulties and build punctuation ability. Concentration will be placed on rules of spelling, use of the dictionary, and punctuation study. Prerequisites: ENG 111 or 101.

OTC-110 Practical Office English **(3-0-3)**

This course gives the prospective office technologist practice in the rudiments of fundamental English, including punctuation, capitalization, sentence structure, spelling, and syllabication of typewritten work. It incorporates the use of office reference books in conjunction with the office-related practice materials. Prerequisites: ENG 111, OTC 100, IFM 101.

OTC-111 Information Processing Technologies **(1-3-2)**

Instruction in the use of machines and systems for processing numerical and verbal business information. Special emphasis is placed on the practical operation of equipment, the analysis of cost factors, and information flow. Prerequisite: IFM 203.

OTC-115 Data Entry: Concepts and Applications **(2-3-3)**

The student receives introductory skill development in keying data using an electronic keyboard. Emphasis is placed on developing accuracy and productivity in data preparation. Prerequisite: IFM 103.

OCT-116 Filing **(5-0-5)**

Skill development in records control through instruction in filing principles and theories and actual practice through the use of miniature copies of filing materials; the study of manual and automated systems is included. Prerequisite: None.

OTC-212 Production Data Entry **(1-4-3)**

The student data entry operator will also function as a student manager responsible for supervising data entry projects. In an effort to familiarize the learner with various data entry systems and keying devices, the student will observe a local data processing operation and will prepare a written report for class presentation. Prerequisite: OTC 115.

***OCT-213 Office Procedures** **(3-2-4)**

This course is designed to give the student training in the various skills necessary in performing office routines. Prerequisites: IFM 105, OTC 111, OTC 116.

OTC-214 Machine Transcription **(2-3-3)**

The student will learn how to transcribe mailable letters and other office communications by transcription from machines. The student will be expected to produce from tapes and belts mailable letters which are free from errors of punctuation, spelling and form. Prerequisites: IFM 105, OTC 110, OTC 111.

OTC-216 Payroll Procedures **(5-0-5)**

A course in payroll recordkeeping including the accounting aspects of maintaining employee earnings records, the computation and recordkeeping of deductions, and the preparation of employee and employer reporting forms. Prerequisite: BUS 117.

***OTC-218 Cooperative Education** **(0-20-2)**

In order to receive credit for OTC 218, the student must secure and successfully complete 220 hours of actual employment in a job approved by the department co-op instructor. This experience should allow the student to relate more meaningfully to the world of work and to a specific place in the world of work. Prerequisite: Successful completion of all course work.

***OTC-220 Seminar on Cooperative Education** **(2-0-2)**

During the seminar sessions, the working student will discuss the problems encountered in the position and the means to overcome these problems. Corequisite: OTC 218.

OTC-272 Vocabulary Building **(2-0-2)**

The expansion of the student's active and passive vocabularies is the major goal of this course, with special emphasis given to the vocabulary of business. The study of prefixes, suffixes, root words, synonyms, and homonyms provides the basis for an introduction to selected new words and the foundation for growth in the use of new words and the determination of meanings of previously unknown words. Prerequisite: None.

PED-101 Beginner Tennis **(0-3-1)**

A course designed to give beginners a thorough knowledge of the history, rules and strategy as well a the fundamental skills of tennis.

PED-102 Intermediate Tennis **(0-3-1)**

This is a follow-up course to PED 101 with emphasis on game strategy and doubles play. Prerequisite: PED 101.

PED-103 Advanced Tennis **(0-3-1)**

This course is designed to provide students with an opportunity to place intro practice the skills developed in PED 101 and PED 102. Emphasis is placed on actual playing time to sharpen previously learned skills & strategies against players of advanced abilities. Prerequisite: PED 102.

PED-105 Beginner Bowling **(0-3-1)**

The fundamentals of ball selection, grips, stance and delivery are taught along with rules, history, scoring and the general theory of spare coverage. Prerequisite: None.

PED-106 Intermediate Bowling **(0-3-1)**

This course provides an opportunity to put into practice the knowledge and skills acquired in PED 105. Instruction is supplemented through films and participation at bowling lanes. Prerequisite: PED 105.

PED-110 Snow Skiing **(0-3-1)**

The study of the fundamentals of skiing techniques. Emphasis will be on developing skills in christies, parallel skiing, and basic jumps. Prerequisite: None.

PED-115 Beginner Golf **(0-3-1)**

A course designed for teaching beginners the grip, stance, swing, and use of the various clubs, along with history and etiquette of play. Prerequisite: None.

PED-116 Intermediate Golf **(0-3-1)**

Emphasis here is placed on rules and etiquette, procedures for playing and the swings involved. Includes playing time at local courses. Prerequisite: PED 115.

PED-117 Advanced Golf **(0-3-1)**

This course is designed to provide students with the opportunity to place into practice the skills developed in PED 115 and PED 116. Emphasis is placed on actual playing time at various local golf course. Prerequisite: PED 116.

PED-120 Beginner Volleyball **(0-3-1)**

A course designed to include the fundamental skills, history, rules and strategy of the game. Prerequisite: None.

PED-121 Intermediate Volleyball **(0-3-1)**

This course involves the development of the necessary skills and strategies for playing volleyball. Emphasis is placed on proper techniques of play and development of basic skills used in playing. Prerequisite: PED 120.

PED-122 Advanced Volleyball **(0-3-1)**

This course is designed to provide students with the opportunity to practice the skills and abilities developed in PED 120 and PED 121. Emphasis is placed on actual playing time to sharpen the previously learned skills and strategies. Prerequisite: PED 121.

PED-125 Beginner Basketball **(0-3-1)**

A course designed to teach the history, rules and strategy as well as the fundamental skills of basketball. Prerequisite: None.

PED-126 Intermediate Basketball **(0-3-1)**

This course emphasizes physical conditioning and the necessary skills for participation in basketball games. Prerequisite: PED 125.

PED-127 Advanced Basketball **(0-3-1)**

A course designed to provide students with an opportunity to place into practice the knowledge, skills, and abilities learned in PED 125 and PED 126. Emphasis is placed on actual playing time to sharpen previously learned skills and abilities. Prerequisite: PED 126.

PED-130 Beginner Physical Fitness **(0-3-1)**

A course designed to develop the ability to demonstrate vigorous physical action. The course includes endurance, power, strength, and agility with the purpose of continuing these traits into smooth, effective action both at work and in play. Prerequisite: None.

PED-131 Intermediate Physical Fitness **(0-3-1)**

This course is a continuation of PED 130 and is designed to direct the student in a program of physical development and coordinated movement. Prerequisite: PED 130.

PED-132 Advanced Physical Fitness **(0-3-1)**

This is a follow-up course to PED 131 with greater emphasis on rhythmic activity and emphasis on a planned program for future fitness. Prerequisite: PED 131.

PED-135 Nature Hiking **(0-3-1)**

Study includes instruction on how to equip and take care of oneself on the trail, including clothing, hygiene, and necessary equipment. Trail hikes will be taken to practice learned knowledge. Prerequisite: None.

PED-140 Beginner Softball **(0-3-1)**

A course designed to include the fundamental skills, history and rules of the game. Prerequisite: None.

PED-141 Intermediate Softball **(0-3-1)**

The course includes the development of necessary skills and knowledge for playing softball. Emphasis is placed on proper techniques and proper strategies for playing softball. Prerequisite: PED 140.

PED-142 Advanced Softball **(0-3-1)**

The course is designed to provide students with the opportunity to practice the skills and abilities developed in PED 140 and PED 141. Emphasis is placed on actual playing time for practice or previously learned skills and strategies. Prerequisite: PED 141.

PED-145 Fundamental Sports **(0-3-1)**

A course designed for students who desire participation in a variety of sports activities including basketball, volleyball, archery, badminton, tennis, softball, gymnastics, fitness, bowling, and golf. Emphasis is placed on acquainting the students with the rules and knowledge of each activity so that participation in sports will be stimulated. Prerequisite: None.

PED-150 Beginner Gymnastics **(0-3-1)**

A course designed for teaching the fundamentals of gymnastics on the parallel bars and mats. Prerequisite: None.

PED-151 Intermediate Gymnastics **(0-3-1)**

This course is a follow up of PED 150 with emphasis on leadership training on gymnastics equipment. Prerequisite: PED 150.

PED-155 Track & Field **(0-3-1)**

A course designed to develop knowledge, skill and interest in track and field events. Prerequisites: None.

PED-160 Beginner Weight Training **(0-3-1)**

A course designed for teaching the basic skills of body development through weight training. Prerequisites: None.

PED-161 Advanced Weight Training **(0-3-1)**

A continuation of the principles learned in PED 160. The student should gain knowledge of the principles of strength development and improve himself physically. Prerequisite: PED 160.

PHO-201 Introduction to Photography **(1-2-2)**

Instruction includes the processing and printing of film; photographing scenes, legal aspects of crime photography, preparation of courtroom photo evidence, lighting at a crime scene, care of photographic equipment. Prerequisite: None.

PHY-101 Properties of Matter **(3-2-4)**

Introduces the student to use of S.I. system of measure as well as the British system, including precision and accuracy of measured quantities. Basic principles of physics including solids and their characteristics, liquids at rest and in motion, and gas laws are considered. Prerequisite: Mat 100.

PHY-102 Mechanics **(3-2-4)**

Major areas covered in this course are force, motion, work, energy, and power. Instruction includes such topics as vectors and graphic solutions, basic machines, friction and torque. Prerequisites: PHY 101, MAT 101.

PHY-103 Electricity **(3-2-4)**

Basic theories of A.C. and D.C. including the electron theory and production of electricity by chemical action, friction, magnetism and induction. Industrial application involving the use of voltage, amperage, resistance, horsepower and wattage are major parts of the course. Prerequisites: PHY 101, MAT 102.

PHY-105 Physics **(4-0-4)**

This course provides a review of Applied Mathematics and teaches the fundamentals of Electrical and Radiation Physics. Prerequisite: None.

PHY-1100 Industrial Science **(3-2-0-4)**

An introduction to physical principles and their application in industry. Topics in this course include properties of matter, basic electrical principles, heat, principles of force, motion, work energy, and power. Prerequisite: MAT 1101.

PHY-1101 Applied Science I **(3-2-0-4)**

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: MAT 1101.

PHY-1102 Applied Science II **(3-2-0-4)**

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power. Prerequisites: PHY 101.

PNE-1112 Fundamentals of Nursing **(6-2-2-8)**

This course provides an introduction to the care of the patient through a study of the basic needs of all persons in health or in illness. The nursing process is the basic for learning the principles of nursing. Basic skills for meeting the patient's needs are developed in lab practice and by performance in the clinical setting. Prerequisite: None.

PNE-1113 Pharmacology **(2-0-0-2)**

Sources, effects, legalities and usage of drugs as therapeutic agents, prescriptions of medications, drug classifications and nursing implications are taught in this course. The student gains proficiency in utilizing the apothecary metric system conversion in determining dosage and administering medications by the various routes to patients. The student gains the ability to implement the nursing process as it relates to the administration of medications. Prerequisites: None.

PNE-1120 Clinical I Medical-Surgical **(0-0-15-5)**

This portion of the program consists of care of selected patients in the hospital. Careful supervision is given the student to insure maximum opportunity to develop nursing skills. Assignments are correlated to classroom instruction with emphasis on total patient care. Prerequisites: PNE 1112, PNE 1113, BIO 111, NUT 101.

PNE-1122 Medical-Surgical Nursing I **(8-0-0-8)**

This course is a beginning study of illness conditions. Emphasis is placed on the assessment of adult patients' needs and in the planning, implementing and evaluating of their care. Therapeutic intervention pertinent to disorders of the musculoskeletal system and the female reproductive system as well a study of infectious diseases, cancer, and pre and post-operative care is taught in this course. Prerequisites: PNE 1112, PNE 1117, PNE 1113, BIO 111, NUT 101.

PNE-1123 Maternal and Newborn Care **(4-0-0-4)**

This course is designed to present a family-centered approach as the theoretical basis for this course. Emphasis is placed on assessment of the female during the normal antepartum, labor and delivery, an post-partum stages as well as the needs of the normal newborn and in the planning, implementing and evaluating of their care. Also included is a theoretical overview of common complications of the maternal cycle with a brief consideration given to the newborn. Drug therapy is correlated with an appropriate course content. Prerequisites: BIO 111.

PNE-1130 Clinical II Maternal-Newborn and Medical-Surgical Nursing **(0-0-18-6)**

This course is planned to give the student opportunities to develop skills and implement the nursing process in the care of the maternity patient and the newborn. The student will also further develop skills and competencies as learned in PNE 1120. Prerequisites: PNE 1120, PNE 1122, PNE 1123.

***PNE-1132 Medical-Surgical Nursing II** **(10-0-0-10)**

This course continues the study of Medical Surgical Nursing I, especially the pathophysiological process and therapeutic intervention pertinent to the disorders of the respiratory, circulatory, and gastrointestinal systems as well as the study of urology and the male reproductive system. Prerequisites: PNE 1120, PNE 1122.

***PNE-1134 Pediatric Nursing** **(2-0-0-2)**

This course is designed to guide the student in acquiring knowledge and skills in order to utilize the nursing process to meet the physical, psychological, and social needs of the pediatric patient. The etiology, treatment, and nursing care in common disorders and illness that affect the infant, child, and adolescent are presented. Prerequisites: PNE 1122, BIO 111, PSY 105.

***PNE-1140 Clinical III—Pediatrics and Medical-Surgical Nursing (0-0-18-6)**

This course is designed to provide the student opportunities to develop skills and implement the nursing process in the care of the pediatric patient. Learning experiences are selected to assist the student in developing skills necessary to give comprehensive nursing to the adult medical surgical patients in a variety of situations based on previously and concurrently acquired skills. Further development of skills and competencies learned in PNE 1130 are stressed to prepare the student for the transition to responsible member of the health team. Prerequisites: PNE 1130, PNE 1132, PNE 1134.

***PNE-1142 Medical-Surgical Nursing III (10-0-0-10)**

This course is a continuation of Medical-Surgical Nursing II, especially the pathophysiological process and therapeutic intervention pertinent to the disorders of the nervous, endocrine, integumentary systems and sensory organs. Also included is the therapeutic role of the nurse in emotional or developmental disturbances in individuals. Prerequisites: PNE 1130, PNE 1132.

***PNE-1144 Nursing Seminar (2-0-0-2)**

This course is structured to assist the individual in making the transition from the role of student to that of a functional member of the health team. Legal and vocational responsibilities are stressed. Prerequisite: 4th quarter status.

POL-103 State and Local Government (4-0-4)

This course is a study of state and local government, state-federal interrelationships, the functions and prerogatives of the branches. Problems of administration, legal procedures, law enforcement, police power, taxation, revenues, and appropriations are included. Special attention is given to North Carolina governments. Prerequisite: None.

PSY-097 Behavioral Development (3-0-3)

This course is designed to provide students with the opportunity to become involved with relating to others and to become more aware of themselves. Activities will deal with vocational, educational, and personal concerns. Various exercises, simulations, and other activities (both group and individual) to carry out these objectives will be utilized. Prerequisite: None.

PSY-101 Introduction to Psychology (3-0-3)

This is an introductory survey of history and schools of thought in psychology, including topics such as intelligence, learning, motivation, and emotions. Prerequisite: None.

PSY-105 Human Growth and Development (3-0-0-3)

Human Growth and Development provides knowledge of the basic principles of physiological and psychological stages of the individual through the entire life span. Prerequisite: None.

PSY-151 Applied Psychology for Law Enforcement (3-0-3)

This course draws heavily from the field of social psychology, and psychological concepts routinely applied in Criminal justice. The primary subject areas discussed will be the psychology of conformity, communication, propaganda, persuasion, self-justification, aggression, prejudice, interview and confession, motivation, stress, neurosis, psychosis, personality disorders, sexual deviation, alcoholism and drug addiction. Prerequisites: PSY 101, PSY 203.

PSY-203 Abnormal Psychology (3-0-3)

This is a study of the major abnormal behavior patterns and way by which these aberrant patterns of thinking and acting are developed. Some attention is given to prevention of mental illness and the study of normal defense and escape mechanisms. Prerequisite: PSY 101.

PSY-206 Applied Psychology (3-0-3)

A study of the basic principles of psychology, including perception, emotions, motivation, adjusting, and communicating, that promote growth and development both on the job and in one's personal life. Prerequisite: None.

RAD-100 Introduction to Radiology **(3-0-0-3)**

This course is designed to provide the student with a knowledge of basic positioning in conjunction with protection, radiologic terminology, history of the profession and ethics. Basic office procedures as they are directly related to the Radiology Department will also be included. Prerequisite: None.

RAD-102 Radiographic Technique I **(4-0-0-4)**

This course is designed to teach the beginning radiologic technology student the fundamentals of exposure and darkroom. Conditions necessary for x-ray production, fundamental factors in the production of a radiograph and qualities of a radiograph with emphasis being directed toward the controlling factors of the qualities will be covered. Darkroom principles will include darkroom construction, processing methods: manual and automatic, chemical properties of the developer and fixer, film construction, current media for holding x-ray film. Prerequisite: None.

***RAD-106 Clinical Technique I** **(0-0-12-4)**

Students are exposed to the patient, the various machines and other radiographic accessories. The importance of shielding all patients is stressed. Students learn to do routine examinations limited to chest and extremity work. Prerequisite: None.

RAD-111 Positioning I **(2-2-0-3)**

In Positioning I, the apprendicular skeleton will be taught. Prerequisites: RAD 100.

RAD-112 Radiographic Technique II **(3-0-0-3)**

Radiographic Technique II is a continuation of RAD 102. During this quarter, students will be taught principles involved in conversion techniques, formulas and problem solving for density, photographic effect, inverse square law and magnification. Included also will be information relative to imaging modalities such as image intensification, cinefluorography, tomography, steroscopy. Tube construction which produces line spread function, modulation transfer function and subtraction techniques will be included. Prerequisite: RAD 102.

***RAD-114 Clinical Technique II** **(1-0-21-8)**

This is a continuation of RAD 106. As the students observe a greater variety of examinations, they are permitted to do these under the supervision of a staff technologist. Beginning with RAD 114, a weekly film critique class will be held. Film critique is a course designed to critically evaluate the examinations (gross anatomy, positioning, technique that the students have done by themselves during their clinical rotation). Film critique classes will be held each quarter in conjunction with Clinical Technique. Prerequisite: RAD 106.

RAD-121 Positioning II **(2-2-0-3)**

This will be a continuation of RAD 111. Special emphasis will be placed on the vertebral column and tomography. Prerequisite: RAD 111.

RAD-124 Clinical Technique III **(1-0-21-8)**

As the students increase their knowledge of routine procedures, they will improve upon what they have learned and the variety of examinations that they are permitted to do alone will increase. A weekly film critique class will be held in conjunction with RAD 124. Prerequisite: RAD 114.

RAD-131 Postioning III **(2-2-0-3)**

This will be a continuation of RAD 121. In addition to learning routine skull views, emphasis will be to teach the student to do views of the visceral cranium. Prerequisite: RAD 121.

***RAD-134 Clinical Technique IV** **(1-0-21-8)**

Students are encouraged to conduct the more difficult examinations. Emphasis is placed on all types of skull examinations. A weekly film critique class will be held in conjunction with RAD 134. Prerequisite: RAD 124.

RAD-135 Radiological Anatomy I **(2-0-0-2)**

Radiological Anatomy is a course designed to acquaint the beginning student in Radiologic Technology with the entire skeletal system. This quarter will cover the Appendicular Skeleton. Prerequisite: None.

RAD-136 Radiological Anatomy II **(3-0-0-3)**

This course is a continuation of RAD 135. The axial skeleton will be covered this quarter with emphasis on the skull and visceral cranium. Topographic anatomy, a study of body surface landmarks which aid in externally locating internal structures will also be included. Prerequisite: RAD 135.

RAD-201 Positioning IV **(2-2-0-3)**

All views of the visceral cranium not completed during RAD 1212 will be finished at the beginning of this quarter. Emphasis will be to teach the student methods of doing special views of the skull. Prerequisite: RAD 131.

***RAD-203 Clinical Technique V** **(1-0-21-8)**

Students are assigned to specialty areas: Therapy, Nuclear Medicine and Special Procedures where the students learn to operate injectors, rapid cassette changers, Cobalt Unit and Scanners, in addition to doing radiographic examinations applicable to a specific area. A weekly film critique class will be held in conjunction with RAD 203. Prerequisite: RAD 134.

RAD-205 Medical Use of Radioisotopes **(2-0-0-2)**

For the student to have a well rounded training in Radiological Technology, some training in Nuclear Medicine becomes essential. Students taking this course review Radiation Physics and Radiation Safety. Prerequisite: None.

RAD-210 Positioning V **(2-2-0-3)**

This course will acquaint the student with routine examinations using an opaque media. Emphasis will be placed on examinations involving the thoracic cavity, abdomen and the female reproductive system. Prerequisite: RAD 201.

***RAD-212 Clinical Technique VI** **(1-0-21-8)**

Students are permitted to do examinations alone during this quarter. Staff technologists are required to observe. A weekly film critique class wil be held in conjunction with RAD 212. Prerequisite: RAD 203.

RAD-213 Advanced Radiographic Technique I **(3-0-0-3)**

This first half of this quarter will be devoted to a general review of radiographic exposure. This review will cover all of the courses of previous training. At the end of the quarter, the students will be given a comprehensive examination that will cover all phases of Radiologic Technology. Prerequisite: RAD 112.

RAD-214 Equipment and Maintenance **(2-0-0-2)**

This course familiarizes the student with the component circuits of an x-ray unit to permit detection and correction of simple difficulties which interfere with or prevent the proper function of the equipment or expensive breakdown. Prerequisite: PHY 105.

RAD-215 A Survey of Medical and Surgical Diseases **(2-0-0-2)**

This course acquaints the student with certain changes that occur in disease and injury and their application to Radiologic Technology. Prerequisite: None.

RAD-221 Positioning VI-Opaque Media—Special Procedures **(2-2-0-3)**

This course will teach the students two aspects of positioning: special procedures and opaque/contrast materials indicated for the various examinations. Students will also learn the basic types of contrast materials and the composition of each. Prerequisite: RAD 210.

***RAD-223 Clinical Technique VII** **(1-0-21-8)**

Students are assigned increased responsibility in organizing the daily function of their assigned room, in addition to doing patient examinations. The weekly film critique class will be held to evaluate the dual responsibility of the student. Prerequisite: RAD 212.

RAD-225 Principles of Radiation Protection and Radiobiology (2-0-0-2)

This course is designed to teach the student the biological effects (somatic and genetic) that result from the interaction of ionizing radiation and matter. Also included in the course will be the National Council on Radiation Protection standards for the patient, the general public and radiological personnel. Prerequisite: None.

RAD-231 Positioning VII—Comprehensive Review (2-2-0-3)

This course will provide the student a general view that will cover the preceding seven (7) quarters of positioning. A comprehensive examination, covering the three (3) volumes of the positioning book will be given at the end of this quarter. Prerequisite: RAD 221.

***RAD-223 Clinical Technique VIII (1-0-21-8)**

Students are permitted to work in the area of Radiologic Technology that interests them the most. A weekly film critique class will be held in conjunction with RAD 233. Prerequisite: RAD 223.

SOC-201 Sociology (3-0-3)

A course designed to create a knowledge and awareness of the problems in society today and to fit the students for involvement in those problems that affect their personal lives. Emphasis is on the nature, definition, and analysis of major social problems. While the primary stress is on the sociological point of view, information from other fields in the social sciences is incorporated. Prerequisite: None.

***TDM-1201 Machine Processes (3-0-12-7)**

This course is designed to introduce the student to the tools, instruments, machines, and methods used in the tool and die shop. Basic die-making theory will be presented as it pertains to simple piercing, blanking, and bending dies. Each student will be subjected to a series of projects requiring extreme proficiency. Prerequisite: Machine Shop graduate or equivalent.

***TDM-1202 Machine Processes (3-0-12-7)**

This course is a study of certain individual parts that go into a die assembly. Students will go into detail concerning their making, assembly, functioning and properties necessary for satisfactory service. Continued project work will point out the requirements for precise work. Prerequisite: TDM 1201.

***TDM-1204 Machine Processes (3-0-12-7)**

This course is a continuation of TDM 1201 in which students will make a detailed study of die-block construction, strippers and stock guides, shedders and knock-outs, nest gages, and pushers. Project work has advanced to the finish grinding and assembly stage requiring high quality work from the student. Prerequisite: TDM 1202.

***TDM-1205 Fundamentals of Mold Construction (3-2-0-4)**

This course is a study of plastics in general and plastic terminology and subjects the student to the fundamental processes and basic construction of plastic molds (compression, transfer, and injection), molds for die castings (pressure molding of non-ferrous alloys), and rubber molds. The student will operate compression and injection molding machines and study blueprints and component parts of the molds in these machines.

***TDM-1206 Machine Processes (3-0-12-7)**

A study of die stops completes the study of die components as presented in this course. Stock strip utilization and strip layout will be covered. Die sets and purchased parts will be discussed. A study of die assembly, set up practices, punch press operation, and a miscellaneous group of methods is necessary to complete this course. Prerequisite: TDM 1204.

***TDM-1207 Special Problems and Molding (3-4-0-5)**

This course is a continuation of TDM 1205 and will be used to subject the student to various operations within local industries. Numerous field trips will be scheduled to review operations of pressroom equipment, molding automatic assembly and the building and maintenance of the equipment. Assigned project work will better acquaint the student with dies, molds, jigs, fixtures and gaging. Prerequisite: TDM 1205.

TDT-101 Geometric Tolerances and Inspection Procedures (1-2-2)

Application of Geometric Dimensioning and Tolerancing to insure interchangeability of parts, setting datums, establishment of tolerances, effect of datums and tolerances on gauges and tool design, use of gauges and inspection instruments, inspection procedures, and basics of statistical quality control. Corequisite: DFT 103.

TDT-105 Manufacturing Cost Analysis (2-0-2)

An introduction to the factors that affect manufacturing costs. Concepts include fixed and variable burden rates, material usage, production rates, loss factors, set up costs, scrap recovery, design economy, economics of decision making, break-even and least cost analysis, and differences between manufacturing alternatives when related to the time value of money. Prerequisite: None.

TDT-201 Tool Design I (2-6-4)

An introduction to tool design including the design of basic jigs, fixtures, and gauges. Emphasis will be on fundamentals of tool design, tool planning, tool room practices, capabilities of applicable machine tools and cutting tools, drafting practices related to tool design, selection and use of materials and standard components, use of catalogs and manuals, and tool costs. Prerequisites: TDT 101, DFT 103, MAT 102.

TDT-202 Tool Design II (2-6-4)

The theory and application of pressworking operations employed in the fabrication of sheet metal parts include operations such as blanking, piercing, punching, trimming, forming, and drawing. Design projects involve study and design of compound and progressive dies. Prerequisite: TDT 201.

TDT-203 Tool Design III (2-6-4)

The study of fundamental processes, terminology, basic construction and design of plastic molds (compression, transfer, and injection) and molds for die castings. Shrinkage factors, runner and gate types, parting lines, draft, bosses, ribs, warpage, knockouts, cams, and unscrewing mechanisms are covered. Prerequisites: TDT 201.

TDT-204 Tool Design IV (2-6-4)

The study of automation and unique function equipment including a wide variety of applications such as automatic assembly equipment, gauging,and sorting. The course includes a comprehensive tool design project applicable to the needs of local industry and requires research and utilization of previous course work by the student. Prerequisite: Successful completion of the first six (6) quarters of the program or departmental approval.

TDT-210 Introduction to CNC and Robotic Applications (3-3-4)

An introduction to principles underlying numerical controlled tool concepts: tapes, tape punch, control units, machines, and methods used for manual and computer assisted programming. Survey of fundamental concepts and applications of robotic flexible automation systems. Special emphasis will be on field trips to industry. Prerequisite: EDP 105, MEC 101, MEC 111.

WLD-1101 Basic Welding (1-2-0-2)

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembly and operating the welding equipment. Practice will be given for surface welding and flame cutting. Emphasis on electric arc and gas welding methods applicable to mechanical repair work. Bronze welding and silver soldering may also be covered. Prerequisite: None.

WLD-1102 Basic Welding (1-2-0-2)

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembly and operating the welding equipment. Practice will be given for surface welding and flame cutting. Emphasis on electric arc and gas welding methods applicable to mechanical repair work. Bronze welding and silver soldering may also be covered. Prerequisite: None.

WLD-1112 Mechanical Testing and Inspection (1-3-0-2)

The standard methods for mechanical testing of welds. The student is introduced to various types of tests and testing procedures and performs the details of the test which will give adequate information as to the quality of the weld. Types of tests to be covered are bend, destructive, free-bond, guided-bend, nick-tear, notched-bend, tee-bend, non-destructive, V-notch, Charpy impact, etc. Prerequisites: WLD 1120, WLD 1121.

WLD-1120 Oxyacetylene Welding and Cutting (3-0-12-7)

Introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature on the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead position, braxing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds. Prerequisite: None.

WLD-1121 ARC Welding (3-0-12-7)

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested in order that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment. Prerequisite: None.

WLD-1122 Commercial and Industrial Practices (3-0-9-6)

Designed to build skills through practices in simulated industrial processes and techniques; sketching; and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. Prerequisite: WLD 1120, WLD 1121.

WLD-1123 Inert Gas Welding (1-0-3-2)

Introduction and practical operations in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as: principles of operations, shielding gases, filled rods, process variations and applications manual and automatic welding. Prerequisites: WLD 1120, WLD 1121.

WLD-1124 Pipe-Welding (3-0-12-7)

Designed to provide practice in the welding of pressure piping in the horizontal, vertical, and horizontal fixed position using shield metal arc welding processes according to Sections VIII and IX of the ASME code. Prerequisite: WLD 1121.

WLD-1125 Certification Practices (3-0-6-5)

This course involves practice in welding the various materials to meet certification standards. These student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds. Prerequisites: WLD 1120, WLD 1121, WLD 1123, WLD 1124.

BOARD OF TRUSTEES

OFFICERS OF THE BOARD

Richard A. Wood, Jr., Chairman
Gordon H. Greenwood, Vice Chairman
Jo Ann R. Crompton, Secretary

CLASS OF 1987

	APPOINTING AGENCY:
W. P. Griffin, Retired Asheville City Schools Superintendent	Boards of Education
Zeb R. Sheppard, Building Contractor	County Commissioners
Richard A. Wood, Jr., Attorney	The Governor

CLASS OF 1989

J. Herbert Coman, QTI, Inc. (Subsidiary of RCA)	Boards of Education
John Erichson, Retired, Gerber Products	County Commissioners
Gordon H. Greenwood, State House of Representatives	Boards of Education
Talmage Penland, Attorney	The Governor
Joe B. Roberson, Dentist	County Commissioners
Virginia C. Taylor	The Governor

CLASS OF 1991

J. Ray Elingburg, Clerk of Superior Court	The Governor
Elizabeth Harper, North Carolina Alcoholic Rehabilitation Center	Boards of Education
Dave L. Robinson, Square D Company	County Commissioners

EX-OFFICIO

Student Representative (President)	Student Government Association

ADMINISTRATIVE OFFICES

OFFICE OF THE PRESIDENT

Harvey L. Haynes ..... President
B.S., M.A.Ed., Western Carolina University; North Carolina State University; Appalachian State University

Jo Ann R. Crompton ..... Secretary
A.A.S., Asheville-Buncombe Technical College

Sara M. Morris ..... Director of Development
B.S., Business Education, Western Carolina University; M.A., Guidance Counseling, Western Carolina University; Appalachian State University; North Carolina State University

Jane G. Smith ..... Director of Personnel
B.S., Business Administration, Western Carolina University

OFFICE OF INSTRUCTION

Olin R. Wood ..... Vice President, Instructional Services
B.S.Ed., M.A.Ed., Ed.S., Western Carolina; Ed.D., North Carolina State University; University of Oklahoma, San Jose State University; Mars Hill College; IBM Education Center, Atlanta

Pamela L. Baker ..... Secretary
A.A.S., Asheville-Buncombe Technical College

Jay Canter ..... Area Coordinator, Hospitality Education
B.S.Ed., Appalachian State University

Burney Hay Gardner ..... Instructor, Human Resources Development
B.S., Auburn University; M.A., Columbia Theological Seminary

Elizabeth R. Heaton ..... Coordinator/Job Developer, Human Resources Development
A.S., Roane State Community College; B.S.W., East Tennessee State University

Max V. Hutchins ..... Dean, Instructional Services
B.S., Business and Economic Education; M.A., Business, Economic and Occupational Education, Appalachian State University C.A.G.S., Ed.D., Vocational and Technical Education Virginia Polytechnic Institute and State University; Western Carolina University; North Carolina State University

Cynthia R. Ingle ..... Secretary
Technical Diploma, Asheville-Buncombe Technical College

Virginia C. Kirkland ..... Management Information Specialist, Human Resources Development
Blanton's Business College

Kathryn A. Lemieux ..... Secretary
A.A.S., Asheville-Buncombe Technical College

Marilyn P. Little ..... Instructor, Human Resources Development
B.A., Warren Wilson College

Wayne Purcell ..... Director, Small Business Center
A.A., Marketing, L.A. City College; B.S., North Carolina Central University

Renee Reich ..... Instructor, Human Resources Development
B.S., Saint Francis College, PA

Sherry Rhodarmer ..... Secretary
A.A.S., Asheville-Buncombe Technical College

Jean C. Robbins ..... Director, Academic Continuing Education
B.A., Mars Hill College; M.A., University of Louisville; Wake Forest University

Gaylen K. Saunders ..... Secretary
Cecil's Junior College

Ray E. Sawyer ..... Director, Continuing Education—Madison County
B.S., Newberry College

Juanita R. Sluder ..... Secretary
Cecil's Business College; L.O.M.A. Management Institute

Lowell Smith ..... Dean, Continuing Education
B.S., Mathematics; M.A.Ed., Western Carolina University; Georgia Institute of Technology

Rhonda P. West ..... Secretary
A.A.S., Asheville-Buncombe Technical college

Robert L. White ..... Visiting Artist
University of Georgia; Apeiron Workshop, Inc.

Eileen Williams ..... Secretary

OFFICE OF STUDENT SERVICES

John W. Davis ..... Vice President, Student Services
B.S., Florida State University, M.A.Ed., Western Carolina University; University of Florida; North Carolina State University; California State College, LA

Mary S. Carpenter ..... Counselor
B.A., Elon College; M.A.Ed., Western Carolina University; University of Indiana; University of North Carolina at Greensboro

James Z. Drummond ..... Counselor
B.S.I.T., Pittsburg State University; Kansas University; UNC-A; Western Carolina University

Diane Hall ..... Secretary
Office Technology, Asheville-Buncombe Technical College

A. Thomas Hansen ..... Director of Counseling
B.A., M.A.Ed., Western Carolina University

Paul Hensley ..... Veterans Service Officer
A.A.S., Asheville-Buncombe Technical College; B.S. Western Carolina University

Frances N. Johnson ..... Registrar
A.A.S., Asheville-Buncombe Technical College; B.A., University of North Carolina at Asheville; M.A.Ed. Appalachian State University

Catherine R. Noblitt ..... Secretary/Data Entry (Registrar)
Winthrop College

Charlene Plemmons ..... Job Developer
On assignment from the NC Employment Security Commission

Connie B. Rice ..... Director of Admissions
A.A.S., Asheville-Buncombe Technical College; B.S., B.A., Western Carolina University; M.A.Ed., Western Carolina University

Sandra Williams ..... Secretary
A.A.S., Asheville-Buncombe Technical College

OFFICE OF ADMINISTRATIVE SERVICES

K. Ray Bailey ..... Vice President, Administrative Services
B.S., Middle Tennessee State University; M.A.Ed., Western Carolina University; North Carolina State University; George Washington University of Nebraska at Omaha

Glenn T. Anderson ..... Director, Financial Aid
B.A., Youngstown State University; M.A.Ed., Wake Forest University; Miami University

Vicki P. Blalock ..... Bookkeeper
B.S., Mars Hill College

Alden B. Chrisawn ..... Director, Business Services
A.A.S., Asheville-Buncombe Technical College; B.S., Mars Hill College

Bruce E. Clyne ..... Chief Security Officer
A.A.S., Asheville-Buncombe Technical College

Marie M. Farley ..... Bookstore Clerk

Bobby C. Freeman ..... Director, Building & Grounds

Jessie P. Goforth ..... Bookkeeper
Blanton's Business College

Carolyn C. Hadaway ..... Purchasing Agent

Maretta K. Hensley ..... Library Technical Assistant
A.A.S., Asheville-Buncombe Technical College

Terry H. Holt ..... Library Clerk/Processing
B.S., East Carolina University at Greenville North Carolina

Peggy Kyle ..... Coordinator, Library Services
B.A., Warren Wilson College; M.L.S., Appalachian State University; Montreat-Anderson College

Iona McCurry ..... Duplicating/Mail Clerk

Ilka Bowditch McDowell ..... Acting Coordinator, Learning Laboratory
B.S., M.S., North Carolina A & T State University; Appalachian State University; Western Carolina University

David C. McKinney ..... Director, Administrative Computer Systems
A.A.S. Electronics; A.A.S. Electronic Data Processing, Asheville-Buncombe Technical College

Shirley B. McLaughlin ..... Director, Learning Resources Center
B.S.Ed., Western Carolina University; M.L.S.Ed.S., Appalachian State University; East Carolina University; Winthrop College

Laurie Manley ..... Accounting/Data Processing Clerk
A.A.S., Asheville-Buncombe Technical College; B.A., Music, Mars Hill College

Norma F. Pendleton ..... Bookstore Manager
A.A.S., Asheville-Buncombe Technical College

Marie T. Pinner ..... Switchboard Operator

Merion E. Presha ..... Secretary
A.S., Kittrell Junior College

Margaret A. Shope ..... Accounting Clerk
Cecil's Business College

Kate H. Utter ..... Coordinator, Audio-Visual Services
B.A., Educational Media, Appalachian State University

Rebecca R. Watkins ..... Accounting Clerk
A.A.S., Asheville-Buncombe Technical College

FACULTY

Division of Business Education

Richard M. White (1965) ..... Director, Division of Business Education
B.S., Business Administration; M.A.Ed., Western Carolina University

Joseph W. Franklin (1980) ..... Chairperson, Business Computer Programming
B.S., Mars Hill College; M.A., Appalachian State University

Albert A. Freeman (1966) ..... Instructor, Business Administration
B.S.Ed., Appalachian State University; M.A.Ed., Western Carolina University

Sallie P. Graves (1974) ..... Instructor, Office Education
B.S., Business Education; Barber-Scotia College; M.A.Ed., Western Carolina University

James A. Hagan (1974) ..... Chairperson, Division of Business Education
B.S., M.A., Appalachian State University; Licensed Real Estate Broker

Sylvia McCarty (1985) ..... Instructor, Office Education
B.B.A., Memphis State; M.Ed., Florida Atlantic

Carol Y. Mull (1983) ..... Chairperson, Office Education
A.B., Lenoir Rhyne College; M.A., Appalachian State University

Garnet O. Pace (1984) ..... Instructor, Business Computer Programming
A.A.S., Asheville-Buncombe Technical College; B.S., B.A., Western Carolina University; UNIVAC Education Center

D. Harold Ponder (1974) ..... Instructor, Business Administration
A.A., B.S., Mars Hill College; M.A.Ed., Ed.S., Western Carolina University; M.T.M., H.B., Maynard; Time Study, Henderson, Lindsay and Michaels; University of Tennessee

Ronald B. Sluder (1965) ..... Instructor, Business Administration
B.S., M.B.A., Western Carolina University

Barbara L. Smith (1980) ..... Instructor, Office Education
B.S., Secretarial Administration, University of North Carolina-Greensboro; B.S.Ed., Western Carolina University; M.A.Ed., Western Carolina University and George Peabody College

Kathy S. Toler (1983) ..... Instructor, Business Education
B.A., M.A.T., University of South Carolina

Sherman W. Young, Jr., C.P.A. (1981) ..... Instructor, Business Administration
B.S., Business Administration; M.A., Education, Western Carolina University; Graduate, Southeastern Trust School

DIVISION OF ENGINEERING TECHNOLOGY

Richard D. Croom, P.E., R.L.S. (1966) ..... Director, Division of Engineering Technology
B.S.C.E., North Carolina State University; Bowling Green State University

Maynard E. Bennett (1978) ..... Instructor, Electronics Engineering Technology
A.A.S., Asheville-Buncombe Technical College; B.T., Appalachian State University

Kenneth W. Driver (1970) ..... Chairperson, Civil Engineering Technology
B.S.C.E.C. (Construction Option), North Carolina State University

William P. Fisher (1971) ..... Instructor, Electronics Engineering Technology
B.S.E.E., University of Tennessee

R. Michael Holcombe (1968) ..... Chairperson, Mechanical Drafting and Design Technology
B.S., Industrial Management, Georgia Institute of Technology; Licensed Real Estate Broker

George Hornaday (1985).....Chairperson, Mechanical Engineering Technology
A.A.S., Mechanical Engineering Technology; Asheville-Buncombe Technical College

Carolyn H. May (1970).....Instructor, Chemical Engineering Technology
A.B., Chemistry, University of North Carolina at Greensboro; National Science Foundation Institute

Robert E. Morrell (1968).....Chairperson, Chemical Technology
B.S.Ed., University of North Carolina at Chapel Hill; National Science Foundation Institute; Western Carolina University; University of North Carolina at Asheville

Sherian Perry (1985).....Instructor, Drafting and Design Technology
A.A.S., Mechanical Drafting and Design Technology, Asheville-Buncombe Technical College

Robert D. Wieselman (1984).....Chairperson, Electronics Engineering Technology
B.S., Southern Illinois University

DIVISION OF GENERAL EDUCATION

Thomas E. Gaffigan (1965).....Director, Division of General Education
B.S., Mathematics, M.A.Ed., Western Carolina University

Rex B. Blakeney (1966).....Instructor, Electricity
University of North Carolina at Asheville; Western Carolina University; Licensed Electrical Contractor

William L. Collins (1972).....Chairperson, Guided Studies
B.S., Psychology, M.S., Organizational Psychology, University of Tennessee; Licensed Psychological Associate; Ed.S., Western Carolina University

W. Michael Gray (1981).....Instructor, Biology
B.A., M.S., Appalachian State University

Jo Marguerite Graybeal (1972).....Instructor, English and Social Studies
A.B., English, M.A., English, Baylor University; Ed.S., Western Carolina University

Hamilton H. Gregory (1979).....Instructor, English and Social Studies
B.A., University of Tennessee at Chattanooga; M.Ed., University of Texas at El Paso

George Knox (1985).....Instructor, Law Enforcement Technology
B.S., Criminal Justice, Nova University Florida; M.S., Criminal Justice, Nova University Florida

Celia H. Miles (1971).....Chairperson, English and Social Studies
B.A., Berea College; M.A., University of North Carolina at Chapel Hall; Ph.D., Indiana University of Pennsylvania

Faye P. Muse (1973).....Instructor, Mathematics
B.A., Mathematics, University of North Carolina at Asheville; M.A., Education, Western Carolina University

Joyce J. Parris (1973).....Instructor, English and Social Studies
A.B., University of Georgia; M.A.Ed., Western Carolina University

Ellen Honts Price (1973).....Instructor, English and Social Studies
B.A., Sociology, Westhampton College of the University of Richmond; M.A.Ed., Western Carolina University

James H. Rhea (1965).....Chairperson, Physical Education; Instructor, Mechanical Drafting and Design Technology
B.S.Ed., North Carolina State University; M.A.Ed., Western Carolina University

Toby R. Shook (1966).....Chairperson, Mathematics
B.A., Berea College; Western Carolina University

Bernard C. Smith (1969).....Chairperson, Science
B.S., Clemson University; M.A.Ed., University of North Carolina at Chapel Hill

Roy James Tweed, Jr. (1980).....Instructor, Mathematics
B.S., Mathematics, Mars Hill College; M.A., Mathematics, Louisiana State University

David L. Warren (1978).....Chairperson, Law Enforcement Technology
A.A., Police Science, Davidson County Community College; B.A., Criminal Justice, Pfeiffer College; M.A., Criminal Justice Education, University of South Carolina

Maxie B. Welch (1968).....Instructor, English and Social Studies
B.S., East Carolina University; M.A.Ed., University of Virginia

Laurie S. Wilkie (1979).....Instructor, Mathematics and Physics
B.S., Physics, University of North Carolina at Wilmington

DIVISION OF ALLIED HEALTH EDUCATION

David F. Wolfe (1968).....Director, Division of Allied Health Education
B.S.Ed., M.A.Ed., Western Carolina University

Dorothy S. Aycock, R.N. (1970).....Instructor, Nursing
B.S., Nursing, Berea College; M.Ed., University of North Carolina at Chapel Hill

Karen M. Baker, R.N., F.N.P., (1984).....Instructor, Nursing
A.A.S., Asheville-Buncombe Technical College; B.S., Western Carolina University; Family Nurse Practitioner, MAHEC

Metta Buckner, R.N. (1971) ..... Instructor, Nursing
Memorial Mission Hospital School of Nursing; B.S., Mars Hill College

Brenda Causey, R.N. (1976) ..... Instructor, Nursing
Memorial Mission Hospital School of Nursing; B.S., Nursing, Western Carolina University

Doris K. Cunningham, C.D.A. (1972) ..... Instructor, Dental Auxiliary Programs
University of North Carolina at Chapel Hill; B.S., Western Carolina University

Kathryn P. Daughton, R.N., (1970) ..... Chairperson, Department of Nursing
B.S., Nursing, College of Mount St. Vincent; M.A.Ed., Western Carolina University

Henry B. Dawkins, R.T. (1971) ..... Chairperson, Radiologic Technology
Memorial Mission Hospital School of Radiologic Technology; B.S., X-Ray Technology, Mars Hill College

Ann C. Evans, C.D.A. (1972) ..... Chairperson, Dental Auxiliary Programs
B.S. Ed., Western Carolina University, University of North Carolina at Chapel Hill

Ned H. Fowler, EMT-P (1983) ..... Instructor, Emergency Medical Science
A.A.S., B.A., Accounting, Asheville-Buncombe Technical College; Western Carolina University

Patricia Patton Grimes, M.T., (1978) ..... Instructor, Medical Laboratory Technology
B.S., Medical Technology, University of North Carolina at Chapel Hill

Mary Elizabeth Haney, R.N. (1981) ..... Instructor, Nursing
B.S., Nursing, St. Mary's College at Notre Dame, Indiana; M.A.Ed., Western Carolina University

Jo Ann Holderman, R.N. (1968) ..... Instructor, Nursing
Memorial Mission Hospital School of Nursing; Asheville-Biltmore College; Western Carolina University

Betsy Fridl Krickhan, R.N. (1974) ..... Instructor, Nursing
B.S., Nursing, Marquette University College of Nursing

Lynn Painter (1986) ..... Instructor, Nursing
A.B., General Science, University of Rochester; M.S., Nursing, New York Medical College School of Nursing.

Clinton M. Queen, R.N. (1982) ..... Chairperson, Emergency Medical Science
A.A.S., Nursing, A.A.S., Emergency Medical Science, Asheville-Buncombe Technical College; Western Carolina University

Debra J. Reese (1984) ..... Instructor, Radiologic Technology
A.A.S., Asheville-Buncombe Technical College; B.S., Mars Hill College

Joyce Robertson, R.N. (1967) ..... Instructor, Nursing
B.S., Nursing, Berea College

Eileen F. Rowe, R.N.(1975) ..... Instructor, Nursing
Georgia Baptist School of Nursing; B.S., Mars Hill College

Sherry Morrow Shields, R.D.H. (1973) ..... Instructor, Dental Auxiliary Programs
Central Piedmont Community College; B.S., University of North Carolina at Chapel Hill

M. Jean Stines, R.D.H. (1972) ..... Chairperson, Dental Auxiliary Programs
University of Tennessee; B.S., Mars Hill College

Shaun Riley Tate, R.D.H. (1978) ..... Instructor, Dental Auxiliary Programs
Wake Forest University; B.S., East Tennessee State University; M.A.Ed., Western Carolina University

Laura S. West, M.T. (1970) ..... Chairperson, Medical Laboratory Technology
B.S., Medical Technology, Western Carolina University

DIVISION OF HOSPITALITY EDUCATION

Frederick Johnsson (1968) ..... Director, Division of Hospitality Education
B.S., Florida State University

Gary A. Schwartz (1984) ..... Instructor, Hospitality Management and Administration
B.A., University of Michigan, J.D., Harvard Law

Robert G. Werth, C.E.C., C.C.E., Chef De Cuisine (1968) ..... Chairperson, Culinary Technology
Apprenticeship, Hilton Hotels; New York University; Fellow to the American Academy of Chefs

DIVISION OF VOCATIONAL-INDUSTRIAL EDUCATION

Stans C. Sluder (1961) ..... Director, Division of Vocational-Industrial Education
Blanton's Business College; Hobart Welding School; North Carolina State University

Clarence F. Allison, Jr. (1978) ..... Chairperson, Tool and Die Making
Asheville-Buncombe Technical College; Square D Tool and Die Apprenticeship

Nolan B. Darnell (1978) ..... Instructor, Carpentry and Cabinetmaking
B.S., Industrial Arts, Southern Missionary College

W. J. Davis (1966) ..... Instructor, Machinist
A.A.S., Asheville-Buncombe Technical College; B.S., Industrial Technology, Western Carolina University

Billy W. Haney (1974).....Instructor, Automotive Mechanics
Asheville-Buncombe Technical College; Chrysler Motors Training Center

Charles F. Noblitt (1961).....Chairperson, Automotive Mechanics
North Carolina State University

Robert Swan (1962).....Chairperson, Machinist
North Carolina State University

Robert C. Turpin (1984).....Chairperson, Diesel Engines and Hydraulic Systems
Cecil's Business College; General Motors Training School; Cummins Engine Training Schools

Leslie F. Walker (1977).....Chairperson, Carpentry and Cabinetmaking
Southern Missionary College, N.C. Licensed Building Contractor

William W. Wells (1985).....Chairperson/Instructor, Air Conditioning and Refrigeration
Technical Diploma, Asheville-Buncombe Technical College; B.A., University of North Carolina at Asheville; Western Carolina University

This catalog should not be considered a contract between Asheville-Buncombe Technical College and any prospective student.

Curriculums may be altered to meet the needs of individual departments. A minimum enrollment is required for offering or continuing a class. Adjustments in course sequence and schedule may be made as necessary.

All charges for tuition and fees are subject to change as required by the Board of Trustees.

ASHEVILLE
BUNCOMBE
TECHNICAL
COLLEGE

340 VICTORIA ROAD
ASHEVILLE, NC 28801

An Equal Opportunity Educational Institution

COVER: Scenic downtown Asheville.
Photograph by Tracy McFarlan.